INDUSTRIAL EQUIPMENT NEWS

DECEMBER-1950
VOL. 18 • NO. 12

The Original IEN — FOUNDED 1931

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

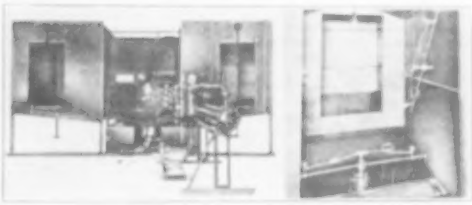
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

IEN-11509

PAINTING . . Pumped spray equipment heats, delivers through rotating heads

Source: SPRA-CON CO.
1400-04 N. Western Ave., Chicago 22, Ill.



Paint is handled by a motor-driven pump in this new production equipment. It is passed through a heater where its temperature is brought up to about 100 deg. F. It is delivered from the heater to a manifold from where it is distributed through steel hose lines into rotating heads mounted in the sides and bottom of the painting chamber. The heads are motor-driven and carry arms inside the chamber on which spray heads are mounted at the ends of flexible connecting tubes.

The paint issues through these heads to apply on all exposed surfaces of work carried on an overhead conveyor track. Paint that does not contact the work falls to the bottom of the chamber where it flows to a sump and returns to a collection tank. Here it is handled by a small motor-driven pump for return to the supply tank and for mixture with makeup extent to hold a desired consistency.

A typical installation in application of primer on production runs of washing machines and ironers moves the work through at 20 fpm., requires no compressed air for spraying, calls for one man to attend the equipment and only 5,000 cfm of exhaust capacity since there is no appreciable amount of paint spray in the air and no expelling air pressure in the painting chamber. The paint is sprayed but not atomized and so drops freely to the drain. The operating elements are all adjustable to permit setup for changing runs of work.

The equipment is available to specification for given work, the company being prepared to make the required layouts, estimates and submit a bid. It has published a 14-page illustrated "Comparison of Operating Costs" based on an actual installation in comparison with a hand-spray booth setup previously employed in a production painting operation.

IEN-11510

PROTECTING . . Catalytic exhaust converts CO from gasoline engine to CO_2

Source: OXY-CATALYST MFG. CO.
Box 58, Wayne, Pa.

Workers in indoor areas are protected against carbon monoxide poisoning and the effects of obnoxious fumes from a gasoline engine as on a power truck, by application of this new catalytic exhaust. Too unit appears in place of the engine's standard muffler, takes about the same space. It is recommended for use on engines burning unleaded gasoline. It will not act upon leaded additives. Its assembly includes a Marion Roggenland pyrometer that mounts on the vehicle dashboard and indicates by temperature, correct or incorrect carburetor settings for engine operation. List price is $140 to $220.

Connection is made to the engine exhaust at A, the gases passing through the venturi B where fresh air is drawn in through the tube C to supply the oxygen required for oxidation of the carbon monoxide and for neutralization of the obnoxious fumes. The gas and air mixture then passes through the catalytic equipped chambers D to exhaust at E. The thermocouple connection to actuate the pyrometer is shown at F in the illustration. The number of chamber elements depends on the size of the gasoline engine. Tests indicate useful life of one to two years for the catalyst.

BUY CHRISTMAS SEALS

Thanks to Christmas Seals, children today have a far better chance to escape TB than you did. But the disease still kills 40,000 people each year in this country. Your purchase of Christmas Seals will help the fight against it.

IEN-11511

SNOW PLOW . . Engine driven gathers and throws snow to one side

Source: MAXIM SILENCER CO.
83-87 Homestead Ave., Hartford 1, Conn.

Two new sizes have been added to the company's 7½ hp. engine-driven snow plow previously described, IEN-11037-49. Both will cover a path 19 in. in width as compared to the larger machine's 28 inches. One carries a Wisconsin engine rating 4.6 hp. The other can be equipped with a 5 hp. Clinton or a 2.5 hp. Briggs and Stratton engine. Overall dimensions of both machines are 70 in. in length by 22 in. in width by 20 in. in height. Shipping weights are 325 and 310 pounds.

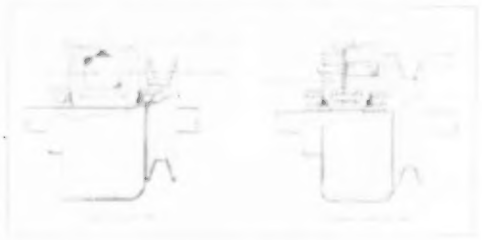
The operator walks back of the machine, starts it and controls its forward movement with a clutch located between the handles. The machine cuts into the snow, piles it or whirls it away to a considerable distance on the side. Maximum speed is 120 and 85 fpm. in the two new sizes. Maximum capacity is 240 and 170 cu. ft. with rotor speed at 800 rpm. All three machines are able to bite into snow that has packed hard or has frozen as well as into light drifts. When depth exceeds the machine capacity the drive can be alternately engaged and released until a path has been broken through.

Bulletin, "Maxim Snow Throwers," 4 pages, describes three available models of the company's snow plow as to construction, features and operation, particularly with wet snow.

IEN-11512

DRIVE . . Magnetic clutch or brake uses mix of iron and graphite particles

Source: EATON MFG. CO.
737-41 E. 140th St., Cleveland 10, Ohio



New line of clutches and brakes in a range of sizes between small units for instrument drive and assemblies of major power requirements is available in size and design to specification. The line supplements the eddy-current couplings, clutches and brakes previously developed by the company under the trade name Dynamatic, previously described IEN-9979-48, to drive accessory equipment on motor vehicles and the larger machine-drive units developed later by the company's division, Dynamatic Corporation, previously described IEN-5488-48.

Two basic types are illustrated in the schematic drawings. One, to the left, maintains a fixed air gap between the rotating members into which the iron and graphite particles are drawn magnetically when current is applied. The other, to the right, has a variable air gap and is similar to a disc type clutch. Here the iron and graphite particles are magnetically drawn between the plates as they are closed magnetically, the action "renewing the friction lining" each time current is applied.

The fixed air-gap unit can be caused to slip at any predetermined torque by reducing the exciting current and when the unit is demagnetized the magnetic and lubricated particles immediately collapse from their hold so the rotors or brake rides free without drag.

The variable air-gap design is recommended for applications that require almost continuous and braking at frequent intervals as in the clutch for a motor vehicle. In both designs wear is infinitely negligible over very long periods of operation. The company is prepared to advise with manufacturers who have to consider the design of the units assembly in their products or equipment operations.

All Makers of These And All Other Products Are Listed In THOMAS REGISTER . . Descriptions . . Ratings . . See Page 50

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 88 and 89 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

From a Purchasing Agent

"The arrival of your monthly publication, Industrial Equipment News, is always eagerly awaited. The entire layout is good fear with each issue and derives many ideas from its content. As a help we contact the advertisers direct. Several times we have used your column 'I Wish I Had' and have found your service friendly and helpful."

Departments

READER SERVICE FORM — Pages 16-17 and 88-89
To assist you in securing the information you want

SUBJECT INDEX — Page 102
Product and services listed by name and by function

PLEASE WRITE — Page 4
We hope to hear our reader participation and

NEW LITERATURE — Page 24
Continued listing of manufacturers' catalogs

NEWS NOTES — Page 70
Mergers of company, organizations and services

"I WISH I HAD" — Page 104
Requests we cannot answer, posted in the hope one can

Our selections in this issue

BUILDINGS — Page 100
Prefab stores of light construction suggest a new use, low cost

BUILDINGS — Page 12
Transport sheets to replace windows of building walls

CALCULATING — Page 71
Machine to check employees and functions for production

CONVEYING — Page 37
Conveying through water flume on 100 spring belt conveyor

FASTENING — Page 14
Nut that is threaded and unscrewed in middle, as a unit

MANAGEMENT — Page 75
Plants to stimulate production, improve employees

PACKAGING — Page 61
Shrink-on cover excludes foreign and dust from open drums

PLASTIC — Page 44
Plastic coating cases to make frames, metal, glass

PROTECTING — Page 7
Air conditioning units for maximum power units

REFRIGERATING — Page 4
Dehydrator supplies to multi low temperature refrigeration

TACHOMETER — Page 2
Remote drive to speed between input and output rolls

TESTING — Pages 39 and 80
Industrial equipment needs testing or service manuals

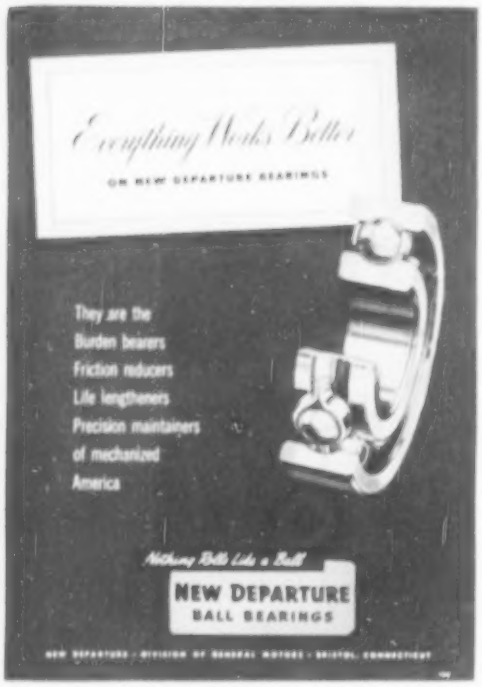
W. E. Smith, V. Pres. & Editor — F. Mason Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

FILL IN AND SEND ALONG TO OTHERS INTERESTED IN PRODUCT INFORMATION

- Plant Operating Mr. .....
- Production Mr. .....
- Engineering Mr. .....
- Product Design Mr. .....
- Purchasing Mr. .....
- .....

▼ BRIEFIT—Identify by IEN-11513 if you write the maker ▼



▼ BRIEFIT—Identify by IEN-11514 if you write the maker ▼

FREE! 32-PAGE HANDBOOK SHOWS HOW TO STOP CONDENSATION DRIP

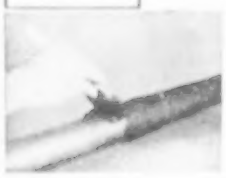
NoDrip

Stops Drip from
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.



HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.
Technical Coatings Since 1901
Dept. IE, Kankakee, Ill.

▼ BRIEFIT—Identify by IEN-11515 if you write the maker ▼

WEBB-- A 4-LETTER WORD FOR DEPENDABILITY

Webb's advanced engineering and modern manufacturing methods have paced industry's demand for better conveyor equipment. For over 30 years Webb has accented DEPENDABILITY and functional design in every component part with resulting longer life and continued productivity. Insist on genuine Specify WEBB—and be sure of the best. Send for Catalog No. 46.

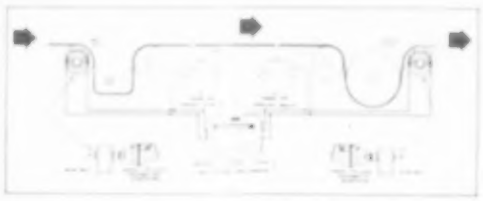
Section of WEBB roller. The Ringscrew Nut and stud shaft has eight A.S.T. alloy steel balls in the large grooves shown below. Double lubrication grease lines prevent abrasion damage. Drop-forged high alloy steel brackets complete this exceptionally sturdy assembly.

JERVIS B. WEBB COMPANY
MANUFACTURERS OF OVERHEAD AND FLOOR TYPE CONVEYORS
OFFICES IN PRINCIPAL CITIES
8915 ALPINE AVE.
DETROIT 4, MICH.

▼ BRIEFIT—Identify by IEN-11516 if you write the maker ▼

TACHOMETER . . Reads changing ratio in speed between input and output rolls

Source: WESTON ELECTRIC INSTRUMENT CORP.
612-16 Frelinghuysen Ave., Newark 5, N. J.



Model 17001 is a new special assembly of the Cutler-Hammer ratio recorder connecting between two Model 724 tachometer generators which are driven by sets of input and output rolls for process work in textile, paper, plastics, rubber, chemical and metal rolling. The strip chart in the recorder reads per cent stretch as it runs processing shrinkage as in Sanforizing, reduction as in metal rolling, or any units that are functions of speed ratio between two rotating elements.

Additional equipment consisting a Model 921 tachometer can be added to indicate output speed in given terms and Model 910 to indicate the per cent stretch that is being recorded.

▼ BRIEFIT—Identify by IEN-11517 if you write the maker ▼

LUBRICATING . . Wetting compound adds to cutting and grinding lubricants

Source: AQUADYNE CORP
220 E. 42nd St., Room 1513, New York 17, N. Y.

$5 per gallon
in gallon cans
$2.70 in tank cars

Surface spread over work and tools or wheels and quick penetration into wheel pores and into deep cuts are promoted by addition of the company's Aquadyne wetting compound to water-soluble coolant oils. The material, previously described IEN 2908-50 for processing, maintenance and extinguishing uses, now is available as a liquid concentrate. One part is added to 1,000 parts of water and the resulting solution is mixed with the soluble oil as in normal practice using water. The compound breaks down interface tension.

▼ BRIEFIT—Identify by IEN-11518 if you write the maker ▼

WOOD WORKING . . Auger bit for power drive, six sizes, 3/8 to 1 in.

Source: WHITMAN & BARNES
40602 Plymouth Road, Plymouth, Mich.

List price is $1 to $1.25 for the six available sizes of this new power auger bit. It can be operated at high speed in soft or hard wood, plywood and is designed for drive by a portable tool or machine spindle having a ¼ in. or larger chuck capacity. The shank is hexagon section to prevent slipping in the chuck. Length overall is 9½ inches. A set of the bits is available at $6.50 which includes the six sizes.

All Makes of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BRIEFIT—Identify by IEN-11519 if you write the maker ▼

A NEWS ADVERTISEMENT BY
THE DUFF-NORTON MANUFACTURING COMPANY

JACKS . . . Screw type for wide range of pushing and pulling applications

Source: THE DUFF-NORTON MANUFACTURING CO.
Pittsburgh 30, Pa.

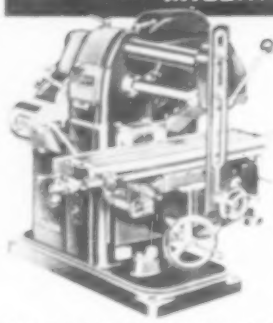
A powerful screw-type jack with various lever sockets for pushing and pulling operations has been developed by Duff-Norton. Widely used in moving, hoisting, shoring, lining, pulling and other industrial applications. This jack offers the most practical method of pushing apart or pulling together steel plates, beams and frames.

Duff-Norton Push and Pull jack also provides mechanical advantage in straightening work, such as posts of wood freight cars, as well as in spreading or stretching the bent or spent rubber tube of frames, tracks or pipe sections, and in conjunction with the new grooves increases the range of applications.

Available in standard models of 1½, 2½ and 3½ ton. The jacks also can be furnished in longer lengths. Extension range from 10 to 15 inches. For more positive operation, the steel screw, nuts and stirrup bolts are machine cut.

▼ BRIEFIT—Identify by IEN-11520 if you write the maker ▼

Atlas the Lowest Cost MILLING MACHINE!



SAVES HUNDREDS OF DOLLARS A YEAR ON SMALL PARTS MILLING!

ATLAS PRESS CO.
29 N. Wells Street
Chicago, Illinois

MATCHED PRECISION TOOLS FOR WOODWORKING AND METALWORKING

▼ BRIEFIT—Identify by IEN-11521 if you write the maker ▼

It's READY...Just AIM, pull the trigger...and FIRE IS OUT!

Kidde CO_2 portables are always ready. Just pick up, point horn at fire, pull the trigger. Flame-smothering carbon dioxide does the rest—quick, sure, safe. Write for free literature.

When you think of CO_2 call Kidde!

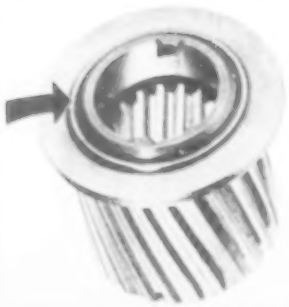
Kidde

Walter Kidde & Company, Inc., 1236 Main St., Belleville 9, N. J.

▼ BRIEFIT—Identify by IEN-11522 if you write the maker ▼

SAVE TROUBLE AND EXPENSE TRY EASY-FLO FIRST

The EASY-FLO low temperature silver brazing alloys have licked hundreds of metal joining jobs on which other methods have failed—for instance—the Chevrolet gear shift synchronizer shown. They used to spot weld the end ring (arrow) to the body, but failures were frequent. They also tried various alloys without success—until they turned to EASY-FLO No. 3. Since then they haven't had a single failure.



THE NEW BULLETIN 20

will make clear to you where and how to use EASY-FLO and why it will pay you to try this time, labor, cost-saving alloy *first*. Write for a copy of this idea-packed bulletin now.

HANDY & HARMAN 82 Fulton St., New York 7, N. Y.

REPRINT—Identify by IEN-11523 if you write the maker

It's here again . . . bigger, better, more useful than ever!

AGAIN we begin our new year with fresh technical problems, asked for the original edition . . . and now here is a new, enlarged and revised edition which is game for the asking.

The desk size Sandbeck contains a series of one page articles which explain the practical meanings of technical terms used in describing and measuring the properties of metals and alloys.

It includes a table of comparison of the Inco Nickel Alloys physical and mechanical properties, as value of engineering, secret and Government specifications.

No matter how much you already know, it's a safe bet you can pick up some new and useful information in "The Technical Editor Speaks." Send for it now! Just fill in the answer on the handy reply card.

THE INTERNATIONAL NICKEL COMPANY, INC.
75 Wall Street, New York 5, N. Y.

REPRINT—Identify by IEN-11524 if you write the maker

REPRINT—Identify by IEN-11525 if you write the maker

Browning

FLEXIBLE COUPLINGS WITH SPLIT TAPER COMPRESSION BUSHINGS

(1) Bushed type—eliminates expensive reboring—wide bore selection.

(2) Completely machined from solid steel or malleable iron castings.

(3) Compact maximum strength.

(4) Neoprene insert added strength, resiliency, shock absorbing, oilproof, greaseproof, heat resistant.

(5) Easy to mount, easy to remove, positive locking clamp fit 1/8th to 40 H.P. range—available from stock.

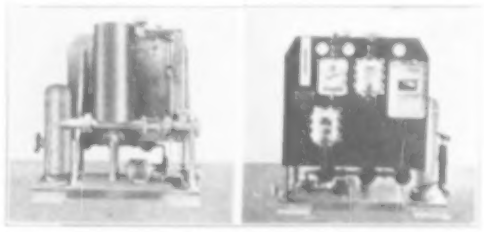
Write for free Literature and the name of the Browning Gripbelt distributor near you

BROWNING MANUFACTURING COMPANY
INCORPORATED
1950 BROWNING DRIVE MAYSVILLE, KENTUCKY

REPRINT—Identify by IEN-11526 if you write the maker

GAS CONDITIONING . . Hot oil fogger prevents deterioration in a gas line

Source: BLAW-KNOX CO.
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.



Dust deposits are cut down to prevent if settling in a gas pipe line. Leaflet distribution are moistened. Corrosion of the pipe interior is retarded. Packings are prevented from drying out by application of thick new. Electric fogger in the line. The equipment is a complete electrically heated assembly ready for connection into the gas line and to a source for electric power. Automatic control regulates and safety protects the action.

Gas is taken from the line ahead of a pressure regulator or orifice that will produce a required pressure drop. A controlled portion of the gas is mixed with a metered supply of oil and the mixture is passed through a vaporizing coil. A second and larger portion of the gas passes through a jet nozzle where it contacts the hot stream of vaporized oil and gas and emulsifies the oil as a very fine fog. Droplets are removed by a centrifugal classifier and the fogged gas passes into the main line of the downstream side of the regulator or orifice.

REPRINT—Identify by IEN-11527 if you write the maker

REFRIGERATING . . Helium liquifier to study low temperature phenomena

Source: ARTHUR D. LITTLE INC.
28-32 Memorial Drive, Cambridge 42, Mass.

Low temperatures down to minus 270 deg. C. is only about 3 deg. C. above absolute zero can be attained and held in the experimental chamber of this new Collins Helium Cryostat. The equipment is, in effect, a refrigerator employing liquified helium as the refrigerant for the study of matter in which molecular activity has been brought almost to a standstill.

It liquifies the helium as supplied in cylinders in the form of compressed gas and then circulates the liquid. It provides for drawing liquid helium off and for liquifying other gases such as oxygen or hydrogen. It rates 4 liters of liquid helium per hour if liquid nitrogen is employed for precooling. It also will produce 4 liters of hydrogen per hour similarly. It rates 2 liters of nitrogen per hour without precooling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

REPRINT—Identify by IEN-11528 if you write the maker

News Advertisement by Rigidized Metals Corporation

FREE MANUAL . . On metal processed for strength, appearance and utility

Source: RIGIDIZED METALS CORPORATION
656-60 Ohio St., Buffalo 3, N. Y.

Opportunity for you to reduce production costs and to make perhaps major product improvements is contained in the illustrated pages of this new 12 page manual. In it we have assembled data describing our process of design-strengthening and texturing metal sheet and strip for your fabrication. Materials include aluminum, stainless steel, ferrous and non-ferrous metals in sheet and strip.

Illustrations show available designs, typical applications and explain the improvement made in mechanical properties by redistribution of metal in the sheet or strip as a result of the processing.

Particularly we suggest your study of the Idea Chart occupying a page of the manual. In it we have compiled actual product applications for Rigidized Metals along with the product manufacturers' stated reasons.

Just write IEN-11528, into your reader service form with this issue of Industrial Equipment News or note the number in your letter to us. If you write direct and can tell us what you have in mind perhaps we can give you specific data and a sample or two of the processed metal.

REPRINT—Identify by IEN-11529 if you write the maker

LUBRICATION ECONOMY

"THIS LUBRICANT reduces Service Calls!"

The sales director of the Lynch Corporation, manufacturers of the MURPAK forming and wrapping machine, writes us: "Our Service Engineers can readily spot machines that have had other than LUBRIPLATE Lubrication, as these machines do not give the service they should."

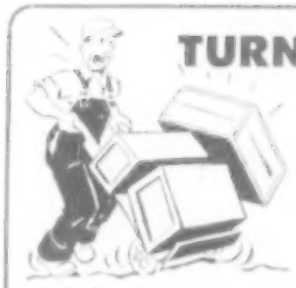
1. LUBRIPLATE reduces friction and wear.
2. LUBRIPLATE arrests rust and corrosion.
3. LUBRIPLATE is non-removal to use.

LUBRIPLATE DIVISION
Cities Service Building 15
Newark N. J.

The Different LUBRICANT!

DEALERS EVERYWHERE

REPRINT—Identify by IEN-11530 if you write the maker



TURNOVER LIKE THIS COSTS YOU MONEY!

Spilled loads, trucking delays, collection hazards are costly. There's no substitute for a *real* heavy-duty floor—and that means concrete, *good* concrete.

Rebuild worn-out floors over weekend too plant to open with "Incor" 24-Hour Cement—ready to use in 24 hours, saves a week or more. Faster thorough "Incor" curing means stronger, longer-lasting floors.

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U. S. Pat. Off.

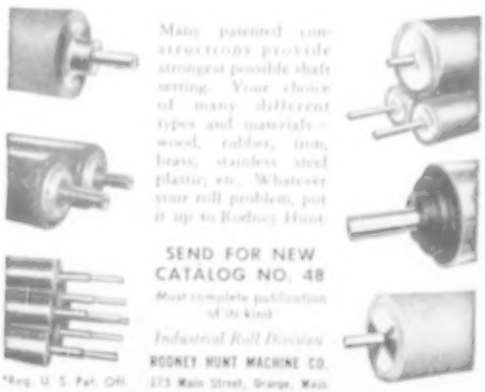
LONE STAR CEMENT CORPORATION

Offices: Albany • Bethlehem, Pa. • Birmingham • Boston • Chicago • Dallas • Houston • Indianapolis • Jacksonville • Kansas City, Mo. • Norfolk • Pittsburgh, Pa. • New Orleans • New York • Omaha • Philadelphia • St. Louis • Washington, D. C.

REPRINT—Identify by IEN-11531 if you write the maker

MANY INDUSTRIAL **ROLL** PROBLEMS are solved by using

SHAF-TITE* ROLLS



Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel, plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
*Reg. U. S. Pat. Off. 173 Main Street, Orange, Mass.

BRIEFIT—Identify by IEN-11532 if you write the maker

The Design Engineer can improve service life

Ingenious design, based upon the understanding of imposed stresses and their proper control, can increase the life of machinery.

A 72 page booklet, free upon request, discusses the relation between design, the choice of steel, and its treatment. Send for it.

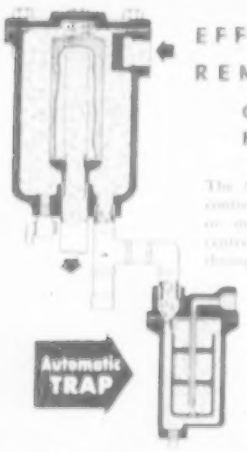
This booklet sent to you FREE

Climax Molybdenum Company
500 Fifth Avenue · New York City

10-F23

BRIEFIT—Identify by IEN-11533 if you write the maker

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

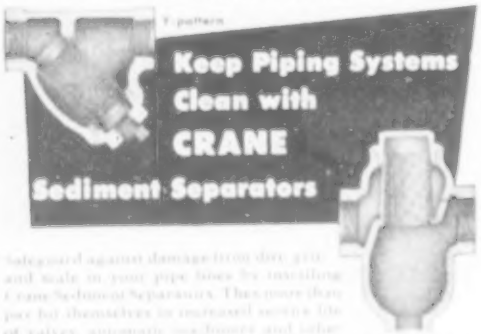
The Adams Poro-Stone filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation plus diffusion through Poro-Stone removes contaminants completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 476.

Automatic TRAP

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS Poro-Stone AIR FILTER

BRIEFIT—Identify by IEN-11534 if you write the maker



Safeguard against damage from dirt, grit and scale in your pipe lines by installing Crane Sediment Separators. They more than pay for themselves in increased service life of valves, automatic machinery and other flow control equipment.

Crane Sediment Separators have no extra large settling area that causes free flow with minimum pressure loss. Not only do they effectively trap all foreign matter, they also furnish a pocket for its accumulation. Periodic blowing out is only maintenance needed. All internal parts readily accessible.

Crane Sediment Separators are made for working pressures up to 400 pounds steam, from patterns in sizes up to 12 inches and patterns in Cast Steel or Forged Steel. See your Nearby Crane Catalog or WRITE FOR CRANE CATALOG 1050.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE
Installing the Crane Piping System
VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

INDUSTRIAL EQUIPMENT NEWS

CEA The Journal IEN CEA

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Circulation and Reader Service Mgr.	A. J. Granoff
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This Issue 65,000 Copies
Printed by Charles Francis Press, New York

Industrial Equipment News acts solely as a news reporting capacity for data supplied to it on new industrial developments.

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461 Eighth Avenue, New York 1, N. Y.

What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 18 DECEMBER, 1950 No. 12

Please Write

Reader verification is a subject new to this editorial column and perhaps it does not belong. We want to talk about it in this closing issue of 1950 because we are right on the edge of breaking an all time record on a subject that is vitally important to us. We need your help. We believe you will give it to us if we explain.

We undertook to establish a product information service in IEN that would accurate and serve men in responsible positions in industrial plants. We also decided to make the service a free one to men actually in authority who would request additions in writing, of their names to the mailing list.

Your response was truly remarkable. The count has risen steadily over the years until at present it is something over 60,000. In effect, we established a new type of industrial circulation through the requests you made to us and backed by acceptance of responsibilities. We call it "verified request." We believe it represents the best possible measure of real interest and actual constructive use of the information service.

At the same time it calls for checking and periodic revision as the service will accompany you without delay both functionally and by plant connection.

We set up this season [illegible] back by including a post card to verify some of a [illegible] from the State. One of these cards was to ask some you received this past year. The probability is that you saw it, filled it in and returned it to us. Our count indicates we are near the record, very near.

Now, if you are not one of those required to send of the card or if you did not see it in the paper, you can carry as high score. We hope to get it on the information. In place of the card you can write it on the reader service form. If you decide to reply to our post card letter, also in this issue, you can [illegible] industrial [illegible].

If you will tell us to continue the service of change your title or our records [illegible] for any reason, we will be grateful. Your [illegible] Effort to those we already have will enable us [illegible] for IEN the greatest expansion that has ever [illegible] made of reader interest in an industrial publication [illegible] Editorial [illegible] Vice President and Managing Editor

"All IEN readers are possible. Interested in our service. However, the primary point we have of their continued interest is that we [illegible] our reader service and their return of the [illegible] verification cards. Since many readers will [illegible] complete issues [illegible] our home proud low in the [illegible] history.

"Every reader interest [illegible] manufacturers of each [illegible] product [illegible] reader interest [illegible] complete and comprehensive and our service [illegible] very important [illegible] our readers are responsible [illegible] type and quality of the service we are [illegible] supply them."

That service [illegible] information and [illegible] Indiana [illegible] 11,000 [illegible] 500 [illegible] to the Web-Head [illegible] 1000 pounds of [illegible] Company which [illegible]

W. E. Irish

BRIEFIT—Identify by IEN-11535 if you write the maker

Dependable . . . Efficient

DUST CONTROL with DUCON FILTERS for every purpose

Multi-Tube Cloth Collector

UNIFLOW BACKWASH COLLECTOR
An automatic continuous filter comprising a multiple of filter tubes.

FIBRE DUST FILTER
For collection of fibrous materials in installations where small floor space and large capacity are essential.

UNIT TYPE
Embodies multiple numbers of cloth filter bags to provide maximum filter area in air flow. Compact, efficient.

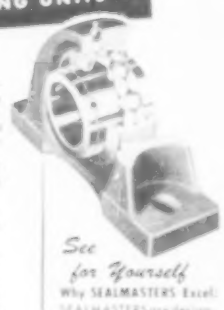
MULTI-TUBE TYPE
For general-purpose dust collecting.

Write for Literature F-1

The DUCON Co.
MINEOLA, N. Y.

BRIEFIT—Identify by IEN-11536 if you write the maker

GET SERVICE with SEALMASTER BALL BEARING UNITS



Machines run longer—smoother—with less maintenance—when they are equipped with SealMaster Ball Bearing Units. This exclusive combination of money-saving features tells why:

- PERMANENTLY SEALED—to exclude dirt and certain grease over long periods.
- SELF-ALIGNING—to add flexibility without seal disruption—eliminates costly misalignment in housing.
- PRE-LUBRICATED—at the factory—ready for immediate plant.

SEALMASTERS are available in Pillow Blocks, Flange Units, Hanger Units, Cartridge Units, Flanged Cartridge Units and Take-Up Units.

Write for CATALOG 545 giving full dimensions and load ratings on the complete Seal Master line.

See for Yourself
Why SEALMASTERS Excel:
SEALMASTERS are designed to give satisfactory service, operate quietly, withstand misalignment, have long periods, get complete data from catalog 545.

BEARING DIVISION
STEPHEN S-ADAMSON Mfg. Co.
231 Kingsley Ave., Aurora, Ill. · Los Angeles, Calif. · Bellville, Ont.

Factory Representatives and Dealers in All Principal Cities

BRIEFIT—Identify by IEN-11537 if you write the maker

WHEN YOU . . .
Disconnect, You Stop the Flow in Both Ends

Wherever the flow of air, fluids or gases must be interrupted, Wiggins INSTA-MATIC couplings are ideal tools. Disconnect a Wiggins, Vent or connect the flow in both ends. Connection and disconnecting is as simple as switching on a light. Wiggins INSTA-MATIC couplings can increase efficiency in your plant. Clean, and lower costs.

EQUIPMENT MANUFACTURERS
Users, engineers, power consultants, may find the page sketch an unique air valve, pressure and vacuum, and many [illegible] Write for Bulletin.

Wiggins
For good of performance, write for name of nearest representative. E. R. WIGGINS OIL TOOL CO., INC., 1424 E. Olympic Blvd., Los Angeles 21, Calif.

QUICK DISCONNECT
INST-O-MATIC COUPLINGS

▼ BREFITT—Identify by IEN-11538 if you write the maker ▼

NO EXCUSE FOR COSTLY MISALIGNMENT!

GET LOVEJOY L-R FLEXIBLE COUPLINGS TODAY

There is no reason for excess wear on bearings, shafts, and other equipment when it is so easy to get these fine flexible couplings. Free-floating, heavy duty load cushions in Lovejoy engineered couplings compensate for surge, back-lash and misalignment. Here's a coupling that runs smooth and quietly at any speed. There are cushions for every type of duty. 1/6 to 2500 h.p.

NO SHUT DOWNS FOR CHANGES
NO LUBRICATION

Get the complete Lovejoy Catalog and see for yourself.

Quick-finding Selector Charts put the right to the couplings you need. Write, wire or phone Today.

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake Street — Chicago 44, Illinois

Also mfrs. of Lovejoy Variable Speed Transmissions and Lovejoy Universal Joints

▼ BREFITT—Identify by IEN-11539 if you write the maker ▼

LOAD CARS FASTER, EASIER *with the* S-A SWIVELOADER

Powerful centrifugal thrower unit loads dry granular bulk materials up to 2" size into the far corners of box cars. One man operates loader without entering car. . . eliminates hand trimming. Handles 40 to 80 TPH depending on weight and nature of material.

For complete details on the SWIVELOADER, write for a copy of bulletin 1046.

STEPHEN S-ADAMSON MFG. CO.

Tollevel—Bin Level Controls | SealMaster Ball Bearings | Car Loaders | Car Pullers | Winches | ChangeMaster Variable Speed Reducers | Saco Speed Reducers

2201 RIDGEWAY AVE., AURORA, ILL.

▼ BREFITT—Identify by IEN-11540 if you write the maker ▼

22-YEAR RUN IN PRINTING PLANT ...and Still Going Strong!

PABCO MASTIPAVE

AMERICA'S No. 1 LOW-COST LONG-LIFE FLOOR COVERING

"The Mastipave laid in our San Francisco Plant in 1927 is still in excellent condition after twenty-two years of continuous service," says Frank T. Sheedy, Production Manager, Stecher-Traung Lithograph Corporation, nationally known printing firm. "It has successfully withstood light cracking in the sides, and chemicals and acids in the photo rooms. We do not know of any other material we could have used that would have withstood such use and still be in its excellent condition."

EVERY BUILDING NEEDS PABCO MASTIPAVE

For 25 years, the Nation's blue chip industries, public carriers, hospitals, public school systems have demonstrated that Pabco Mastipave—both regular and non-slip Grip-Tread types—costs little, looks good, wears every better! Grip-Tread Mastipave is sold in tile goods only, regular Mastipave in roll goods and tiles.

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

PABCO

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
Mail to Dept. E, nearest office

GENTLEMEN: Without cost or obligation to me, please send folder "Every Building Needs Pabco Mastipave."

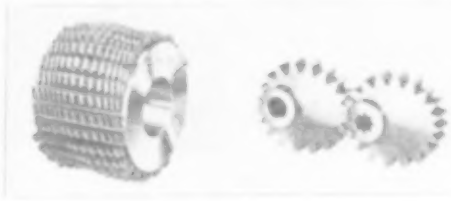
NAME _____ CITY _____

ADDRESS _____ STATE _____

▼ BREFITT—Identify by IEN-11541 if you write the maker ▼

GEAR CUTTING . . Special form hob to cut elliptical gears in production

Source: BARBER-COLMAN CO.
1212-16 Rock St., Rockford, Ill.



Elliptical gears can be cut from bar stock in pairs, two revolve with from a lone ellipse by application of this new hob in a standard hobbing machine. The hob has a number of leads equal to one-half the number of teeth in the gear, each lead cutting one diametrically opposite tooth. Gears can be designed for a specified action and a hob made that will cut them on a production basis.

▼ BREFITT—Identify by IEN-11542 if you write the maker ▼

ADHESIVE . . Water resistant resins meet military packaging requirements

Source: PAISLEY PRODUCTS INC.
1772 Conalport Ave., Chicago 6, Ill.

Free test sample sent on request

Four new adhesives have been added to the company's line to seal solid fibre V board shipping cases, to assemble case liners for wood boxes, to make water resistant paper bags. The four adhesives meet requirements of Specification JAN-P-199. They are available for hand or machine application in 1, 5 and 55 gal. containers, for use by military depots, arsenals, bid contractors, vendors to armed services.

▼ BREFITT—Identify by IEN-11543 if you write the maker ▼

STATIC ELIMINATOR . . Hand brush is assembled with a strip of Polonium

Source: NUCLEAR PRODUCTS CO.
2148-52 Newport Blvd., Costa Mesa, Calif

Statimaster is a new assembly of camel's hair brush, stainless steel ferrule, wood handle and a strip of Polonium under the ferrule. The Polonium emits harmless alpha rays at a distance of 1½ in. to neutralize any static charge in a surface across which the brush is drawn as in the example shown.

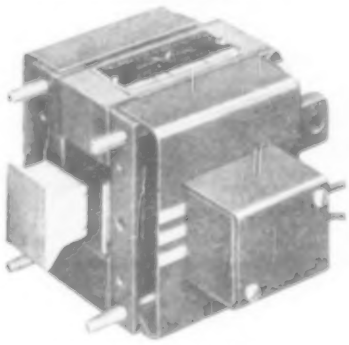
The brush is particularly suited for removal of lint and dust from negatives, glass slides, optical lenses, plastic surfaces where the plain bristling action would add to any static present. Two sizes, 1 and 3 in. in width, list about $5 and $13.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 16

▼ BREFITT—Identify by IEN-11544 if you write the maker ▼

TROMBETTA SOLENOID CORP.

FOREMOST SOLENOID MANUFACTURERS IN THE WORLD.
CAN FURNISH SOLENOIDS FOR ANY APPLICATION CONCEIVABLE.



F-326 PULL TYPE SOLENOID
10 lbs. at 85% 14 lbs. at 100% voltage and 1½" stroke

THE F-300 LINE OF SOLENOIDS IS THE RESULT OF 26 YEARS OF CONTINUOUS DEVELOPMENT, IMPROVEMENT AND EXPERIENCE.

▼ BREFITT—Identify by IEN-11545 if you write the maker ▼

Heat it BETTER and FASTER for LESS!

with CHROMALOX Electric HEATING UNITS

USE CHROMALOX Electric HEATING UNITS for efficient and accurate heat to fit your EXACT needs!

Chromalox Heaters give you high, uniform heat of low watt-density and low operating costs in hundreds of applications. They come in types, sizes, and watts to fit many specific production needs. Check their time and money saving advantages now . . . let their engineering experts assist you.

For details on Chromalox Heaters
Send for the valuable, informative Catalog No. 15 Industrial of the more than 15,000 types, sizes and ratings of Chromalox Electric Heaters for hundreds of uses.

See Chromalox Sheet Type Staff Heater Advertisement, Page 11

EDWIN L. WIEGAND CO., 7500 THOMAS BLVD., PITTSBURGH 8, PA.

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

▼ BREFITT—Identify by IEN-11546 if you write the maker ▼

with R·B* Interchangeable PUNCHES and DIES

R·B punches and dies cut die making costs because they permit use of standardized R·B retainers which are quickly and accurately mounted. Completely interchangeable, R·B punches and dies consequently reduce large inventories.

Quickly and easily installed, yet accurately located and securely locked both vertically and radially, R·B punches and dies reduce press "down time" too, because they enable operators to make quick changes.

R·B standard punches and dies are stocked for immediate delivery. Punches and dies of special sizes, shapes and materials are made promptly to your specifications. *Reduced Bushers

Get the whole story in this 48 page free catalog →

ALLIED PRODUCTS CORPORATION
RICHARD BROTHERS DIVISION

Department 58 • 12615 Burt Road • Detroit 21, Mich.

Also Produced in Allied's Four Plants . . . HARDENED AND PRECISION GROUND PARTS • STANDARD CAP SCREWS • SPECIAL COLD FORGED PARTS • SHEET METAL DIES • ALLITE DIES CAST OF ZINC ALLOY • JIGS • FIXTURES •

▼ BREFITT—Identify by IEN-11547 if you write the maker ▼

Air-Gas Handling

COMPLETE RANGE OF EQUIPMENT [illegible] Also Blowers, [illegible] Air Compressors, [illegible] Gas Compressors, [illegible] Gas and Air [illegible] for many industrial needs.

Allis-Chalmers assumes responsibility for the operation of a complete installation, supplying electric or turbine drives and accessories, blow or pressure systems. Call the nearest office for detailed information or write direct for Single Stage Blower Bulletin 51B01A.

ALLIS-CHALMERS, 909A SO. 70 ST.
MILWAUKEE, WIS.

ALLIS-CHALMERS A-C

▼ BREFITT—Identify by IEN-11548 if you write the maker ▼

ENGINEERED CONVEYORS

for MAXIMUM OPERATING EFFICIENCY

MANUFACTURERS OF PORTABLE CONVEYORS POWER HELPERS CONVEYOR SYSTEMS

Ask Metzgar to suggest a "Most-for-your-Money" conveyor system to meet your requirements.

Reduced handling costs will strengthen your position in a market that is growing more and more competitive.

WRITE FOR DESCRIPTIVE FOLDER

METZGAR

METZGAR CO.
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

▼ BREFITT—Identify by IEN-11549 if you write the maker ▼

INTERLOCKING MONORAIL SYSTEM
Solves Steel Distribution Problem

From car or truck unloading to storage to machine rooms by aid of MonoRail 5-ton high speed crane and power operated MonoRail carrier with interlocking tracks between buildings solves the steel distribution job at The Jeffrey Manufacturing Co.

We'll be glad to send you the whole story.

THE AMERICAN MONORAIL COMPANY
13551 Athens Avenue • Cleveland 7, Ohio

▼ BREFITT—Identify by IEN-11550 if you write the maker ▼

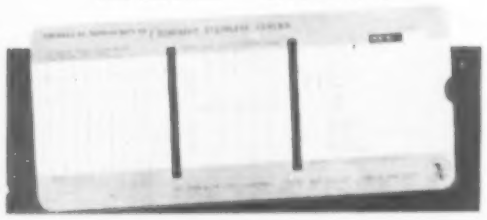
NEW SLIDE CHART

on *Carpenter* Stainless Tubing & Pipe gives you

- Recommended Bending Radii and Cold Deformation for tubing and pipe from ¼" to 6".
- Physical Constants, standard sizes and pressure data.

A new or your company letterhead will start this useful Carpenter Stainless Tubing Slide Chart on its way to you.

THE CARPENTER STEEL COMPANY
Alloy Tube Division Union, New Jersey



▼ BREFITT—Identify by IEN-11551 if you write the maker ▼

MOULDINGS . . Carved and embossed wood for product and architectural use

Source: BENDIX MFG. CO.
190-94 Lexington Ave., New York 16, N. Y.

New designs have been added to the company's imported and domestic lines of embossed and carved wood mouldings. Many are carried in stock. Others are available to order; special designs can be supplied as required. Imported carved mouldings are selected in hard wood. Domestic units are in gumwood or poplar. All can be finished to match other varieties of wood in outdoor construction and in commercial uses. The company has prepared a catalog No. 40A to show available designs.

▼ BREFITT—Identify by IEN-11552 if you write the maker ▼

PROTECTING . . Bi-colored lenses for spectacle or cup-type goggles

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

Workers engaged in furnace operations are protected by a new goggle lense now available as a single piece in two colors. The half lenses are fused together into single units of uniform thickness and are beveled to fit standard goggles. Combinations include cobalt-clear, Norwald-clear, Calobar-clear and Norwald-Calobar to meet requirements.

▼ BREFITT—Identify by IEN-11553 if you write the maker ▼

CONVEYING . . Five foot belt unit with flights and built in motor

Source: INDUSTRIAL ENGINEERING & MFG. CO.
50 Industrial St., Brimfield, Ind.

Model 100-E is a new steel section conveyor mounting an 8 in. neoprene-impregnated belt with 1¾ in. flights secured on 18 in. centers. Drive is by a ½ hp. motor mounted inside the channel housing between the load and return runs of the belt. Access is through a removable cover panel on one side.

Electrical connection is made through a thermal-overload switch on the channel and a 15 ft. extension cord. Operating speed is about 125 fpm. Side rails are provided in removable sections. A belt takeup and carrying handles are standard.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 10

▼ BREFITT—Identify by IEN-11554 if you write the maker ▼

YOU NEED A BUILDING?
Meet your Problems of Space, Production or Storage by using TRUSCON Standardized Steel Buildings.

YOU NEED IT WHEN?
Prompt delivery of TRUSCON Standardized Steel Buildings within certain size limitations is now possible.

YOU NEED IT WHERE?
These standard-unit, prefabricated structures can be shipped anywhere, are easily and speedily erected and dismantled, allowing extreme flexibility.

Series "A"—Type 1

Truscon Standardized Steel Buildings are now available in a wide range of designs and sizes that can be combined exactly to meet your particular and individual needs. Built on the same mass production principles as Fortiform Steelstock with its economy and waterproofing. Used for all kinds of industrial and commercial structures because they offer maximum permanence, ease and speed of erection, low upkeep, low first cost, high investment value. Write for complete information today.

TRUSCON STEEL COMPANY
YOUNGSTOWN 1, OHIO • Subsidiary of Republic Steel Corporation

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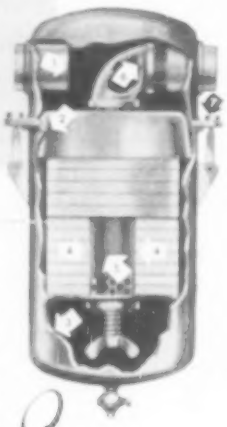
Removes Last Traces of Oil and Moisture from COMPRESSED AIR LINES



THICK FELT DISCS PROVIDE SUPER FILTRATION

Double Action Principle Removes Moisture and Dirt Two Ways—Air is cleaned by both mechanical separation and filtration/absorption. Air enters at (1) strikes Deflector Cup (2) by which heavier droplets and dirt particles are directed to sides (3) and thence downward at high velocity to base. Mechanically cleaned air then passes at low velocity thru Discs (4) which filter the air and absorb last traces of oil and moisture. Clean, dry air passes out thru Bronze Screen (5) and Outlet (6).

Staynew ABSORPTION FILTER

Request Bulletin 8-1A. Address Dept. T

DOLLINGER STAYNEW FILTERS

DOLLINGER CORPORATION
11 CENTRE PK., ROCHESTER 3, N. Y.

▼ BREFITT—Identify by IEN-11556 if you write the maker ▼

Get **MORE** JACKING POWER
LONGER JACK LIFE

Simplex HYDRAULIC JACKS

Dependable performance on difficult jobs produces reports like these from Simplex Hydraulic users. Engineered for faster, safer jacking, these jacks include such features as leakproof high pressure seals of Neoprene, non sticking ball valves, smooth acting ram of SAE X1112 steel—plus many others. Eight models, capacities from 3 to 100 tons—all safety-tested to 50% over rated capacity.

SEND FOR BULLETIN: HYDRAULIC 49

Simplex LEVER • SCREW • HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
1012 South Central Avenue
Chicago 44, Illinois

▼ BREFITT—Identify by IEN-11557 if you write the maker ▼

for • SPRAYING • WASHING • RINSING • COOLING • AIR CONDITIONING

Get the most out of your Spraying Equipment with minimum power . . . with efficient spraying. Use Yarway Nozzles. No internal vanes or other restrictions to clog or hinder flow.

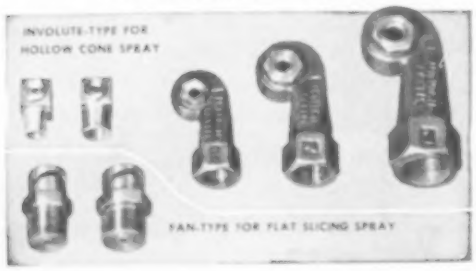
Wide range of standard sizes and capacities. Cast or machined from solid bar stock.

Thousands in use. Write for Bulletin N-616.

YARWAY

SPRAY NOZZLES

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.



▼ DRAFT(T)—(Issued) by IEN-11558 if you write the maker ▼

Aerovent FAN

BELTED DUCT FAN

KEEPS MOTOR OUT OF AIR STREAM

For Foundries, Paint Spray Booths, Stoding, Acid Tank Rooms, etc., where fan motors must be protected.

Aerovent Belted Duct Fans with "Maxivane" design handle maximum air with minimum use of power. Sizes 17 to 84", 1, 2, or 4 stages. All fans furnished with ball bearing motors (others to mounting in any position). Easily installed for many applications.

Certified Ratings — PEMA

Other Models: Direct Connected, Man Cooling, Extended Shaft, Duct Type, Pulley Drive.

Write today for ENGINEERING BULLETIN

AEROVENT FAN CO., INC.

ASH AND BROWN STREET, PIQUA, OHIO

Sales Engineers in Principal Cities

▼ DRAFT(T)—(Issued) by IEN-11559 if you write the maker ▼

AN AXE TO GRIND?

"U. S." Engineers can develop grinding wheels that exactly fit your particular problem

FROM SLABS TO SAUCEPANS . . . from castings to ball bearings, whatever your grinding wheel problem—a U. S. Rubber Wheel can handle it. Our technicians precisely engineer each wheel to your specifications . . . submit it to grinding tests to insure superior performance. 37 years of "U. S." experience and research in bonds and abrasives—and a score other related fields—stand behind every grinding wheel developed. "U. S." engineers have developed more than 2,000,000 possible combinations of size and construction. Let them give you accurate grinding wheel costs in advance and diagnose and solve your problems right in your plant. Write to:

U.S. RUBBER

UNITED STATES RUBBER COMPANY

Grinding Wheel Department • Rockefeller Center, New York 20, N. Y.

▼ DRAFT(T)—(Issued) by IEN-11560 if you write the maker ▼

For **SAFETY** *in marking all kinds of Metal*

Use **SAFETY "HEVI-BEVL"** LETTERS and FIGURES

The most economical all purpose grade of Safety Letters and Figures. Will give outstanding service on almost any marking job. All sizes — 1/8" to 1" characters from stock. Meets Safety Steel for No Spalling and No Mushrooming.

- No Spall
- No Mushroom
- More Service
- Thumb Side Marks for easy identification

Write for Bulletin LF-50.

M. E. CUNNINGHAM CO.

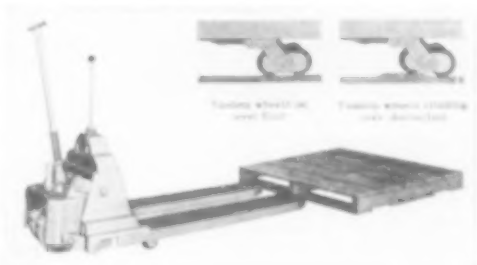
SAFETY STEEL STAMPS

99 East Carson Street • Pittsburgh 19, Pa.

▼ DRAFT(T)—(Issued) by IEN-11561 if you write the maker ▼

TRUCK . . Hand lift for pallets, 1½ and 2½ ton, made of aluminum

Source: MARKET FORGE CO.
23-27 Garvey St., Everett 49, Mass.



Retractable wheels in tandem assembly beneath the fork ends on this new pallet lift truck carry in retracted position 1 in. above the floor when the truck is unloaded and in "down" position. The truck then rides on its front 10-in. load and steering wheels and on two auxiliary wheels where the forks blend into the body. This arrangement "floats" the forks into and out of a pallet with bottom boards ⅝ in. high and internal clearance minimum at 8½ inches. It also permits turning on the 16½-in. wheel base between the steering and auxiliary wheels.

A load is lifted by operating a separate hydraulic pump lever on the truck, the elevating movement being through 4 inches. This movement is accompanied by lowering of the fork wheels and raising of the forks and truck body so the auxiliary wheels clear the floor by 4 inches. The load is then on the ball-bearing steering and tandem wheels, the latter riding easily over obstructions as the truck is pushed or pulled.

Dimensions are 27 in. in width, 28 in. from front to start of the forks, 39 to 60 additional inches in fork length. Height to the top of the steering handle in "up" position is 52 inches. Various types of wheels can be specified in addition to steel.

▼ DRAFT(T)—(Issued) by IEN-11562 if you write the maker ▼

PROTECTING . . Reconditioning service for industrial gloves, mittens, pads

Source: U. S. INDUSTRIAL GLOVE CO.
9352-56 Roselawn Ave., Detroit 4, Mich.

Torn fingers are repaired, holes are patched, tears are mended and industrial gloves, mittens, pads thought to be scrap are returned to useful duty in a reconditioning service the company now offers as a national basis. It has been operating successfully in the Detroit area for some time with a record covering a million or more of gloves, 85 per cent of which were repaired for a fraction of the cost of new gloves.

The service can be applied to gloves, mittens, hand pads made of canvas, leather and other materials. It includes the required physical repair with complete disinfection and sanitizing. The company handles the required transportation in industrial areas, furnishes fireproof containers if they are required. It will explain its five-year plan on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER — Descriptions — Ratings — See Page 10

▼ DRAFT(T)—(Issued) by IEN-11563 if you write the maker ▼

Your **KEY to lower costs**

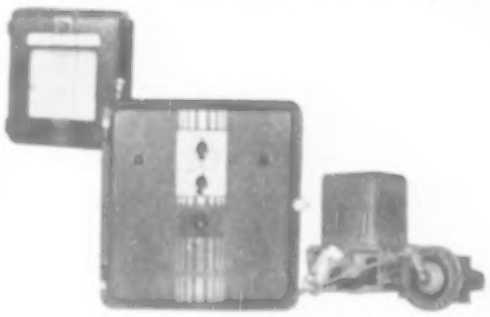
A properly engineered material handling system is often the Key to lowering production costs. This book, containing actual case studies of manufacturers in a wide variety of businesses, can be of value in the study of your own handling problems.

write for your copy today!

Logan Conveyors

LOGAN CO., 200 CABEL ST. • LOUISVILLE 6, KY.

▼ DRAFT(T)—(Issued) by IEN-11564 if you write the maker ▼



P.A.T.'50 is pyrometric control for increasing furnace output

With record demands on production, new P.A.T.'50 Control comes at the ideal time to help increase furnace output. Here's why:

New P.A.T.'50 Control acts on the *speed* of temperature swings as well as their size and permanence. The faster the swings, the further P.A.T.'50 moves the fuel valve. When this movement, called "Rate Action," begins to head off changes, the control backs away and rapidly brings temperature in line.

Only electric positioning control with rate action, P.A.T.'50 can be added to earlier P.A.T. controls by changing control units (center picture) and making slight changes in the controller.

For details, write us at 4905 Stenton Ave., Phila. 44, Penna.

LEEDS & NORTHRUP COMPANY, 4901 STENTON AVE., PHILA. 44, PA.

LEEDS & NORTHRUP

▼ DRAFT(T)—(Issued) by IEN-11565 if you write the maker ▼

SLASH CLEANING and COOLING COSTS with REX FLAT SPRAY NOZZLES

• The hard-hitting flat sheets of water from Rex Flat Spray Nozzles do a top-notch job of cleaning or cooling a wide range of products—and at practically no cost.

Of simple, one-piece construction, they require no adjustment . . . assure a flat, uniform spray of maximum impact force. The only operating cost is for water, and consumption is very low.

Send for our descriptive booklet, using coupon below.

CHAIN BELT REX COMPANY — FLAT SPRAY NOZZLES

Chain Belt Company
1675 W. Bruce Street, Milwaukee 4, Wis. M-7

Please send me a copy of Bulletin NO-58

Name

Company Date

Address

City State

▼ DRAFT(T)—(Issued) by IEN-11566 if you write the maker ▼

Electroforged into one piece *for STRENGTH*

Self-cleaning. Easily Maintained. • Maximum open area. • Single tie rod and band for fitting around obstacles. • Adaptable to many uses.

Blaw-Knox Electroforged Stair Treads available with rolled diamond checker plate nosing, twisted cross-bar nosing or abrasive nosing.

and SAFETY

NON-SLIP — the twist does the trick • Maximum safety and strength . . . that's the ideal combination in Blaw-Knox *electroforged* Steel Grating. Each individual joint is electrically forged together in a union stronger than the surrounding metal! The twisted bar construction gives a firm grip on shoe soles, makes slipping impossible.

WRITE FOR BULLETIN 2296

BLAW-KNOX DIVISION of Blaw-Knox Company

2050 Farmers Bank Bldg., Pittsburgh 22, Pa. — Offices in Principal Cities

BLAW-KNOX ELECTROFORGED STEEL GRATING

▼ REFFITT—identify by IEN-11567 if you write the maker ▼

Production problem gets the "brush-off" with Pliobond

that "bonds anything to anything"

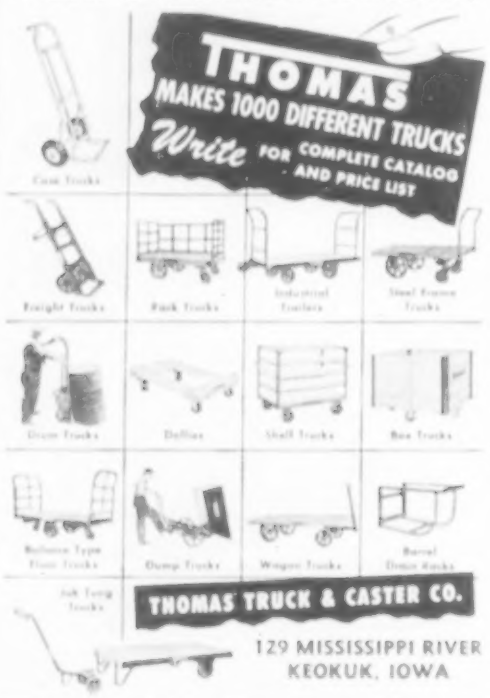
The Milwaukee Dustless Brush Company replaced soldering operations in assembly by using PLIOBOND, the Goodyear-developed light tan colored thermoplastic adhesive that "bonds anything to anything." Result: simplified production, improved product, elimination of bond failures.

Want similar results on your production line? Write today for details on PLIOBOND to:

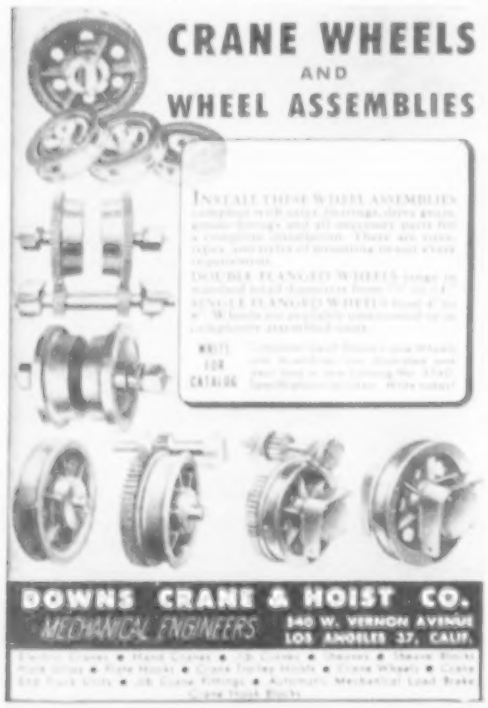
GOODYEAR, CHEMICAL DIVISION
AKRON 16, OHIO

GOODYEAR

▼ REFFITT—identify by IEN-11568 if you write the maker ▼



▼ REFFITT—identify by IEN-11569 if you write the maker ▼



▼ REFFITT—identify by IEN-11570 if you write the maker ▼

TESTING . . Belt matching machine to make up equal length V-belt sets

Source: SMITH POWER TRANSMISSION CO.
1543-47 E. 23rd St., Cleveland 14, Ohio

Flexoid Senior is a new portable design of the company's V-belt matching machine previously described IEN-R397-45. It has capacity for A, B, C, No. 4L and No. 5L V-belts to 240 in. in length. A belt is placed on the two sheaves and the weighted arm is released to read length of the belt on a scale under a predetermined load on the arm.

▼ REFFITT—identify by IEN-11571 if you write the maker ▼

PAINTING . . Multi-color paint for spray application on any surface

Source: MAAS & WALDSTEIN CO.
436-40 Riverside Ave., Newark 4, N. J.

Solid colors are intermixed by the user

Plextone finish colors are multicolor paint which the company is manufacturing and distributing in the East and Mid-West under license from Zolatone, Inc. The paint applies with a standard spray gun to produce a surface finish appearing as a network of interfused but separate colors. Each color retains its own identity to produce an overall textured effect. The finish can be flat or glossy or in combination of glossy highlights on a flat background. Dust free air drying requires about ½ hr.; can be handled in two to three hours.

▼ REFFITT—identify by IEN-11572 if you write the maker ▼

TACHOMETER . . Centrifugal design designed to mount on machines, panels

Source: HERMAN H. STICHT CO.
24 Murray St., New York 7, N. Y.

Model J-6 is a new centrifugal-type tachometer with a 5½-in. dial with white figures and markings on a dull black background back of a non-breakable plastic lens. Finish is in chromium plate over the 7¾-in. flange. The unit is driven by flexible-shaft connection to rotating equipment.

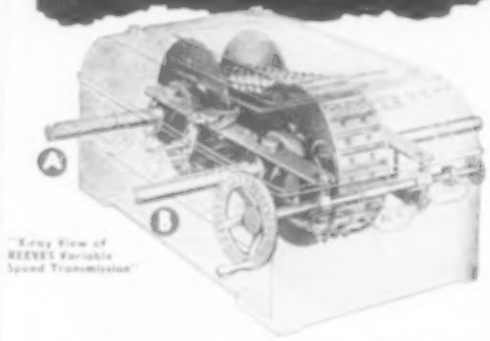
Range is maximum as required between 10 and 10,000 rpm. Standard is minimum at 10 to 100 rpm. and maximum at 300 to 3,000 rpm. The self-bearing mechanism requires no service attention. It is not affected by temperature or magnetic conditions. The pointer travels in clockwise direction independent of the drive direction.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 56

▼ REFFITT—identify by IEN-11573 if you write the maker ▼

▼ REFFITT—identify by IEN-11574 if you write the maker ▼

REEVES Provides the Right Speed for Every Operation



REEVES Variable Speed Transmission provides exactly the right speed for every job, every operation, under every changing condition . . . precise, instant, accurate, infinite speed adjustability for faster processing with absolute precision . . . a wider work range for your equipment. Unit employs the proved REEVES principle of a V-belt driving between two pairs of cone-faced discs moving laterally on parallel shafts. As one shaft (A) receives power at a constant speed, the other shaft (B) transmits power to the driven machine at speeds anywhere above and below that of constant speed shaft, depending on diameter of V-belt contact against each set of discs. Send for Catalog IN-Ya-IN describing REEVES Variable Speed Drives and their application to your driven machines.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

▼ REFFITT—identify by IEN-11575 if you write the maker ▼

Speed Production . . . . Cut Fabrication Costs

With this Low-Priced Oxy-Acetylene Cutting Machine OXWELD CM-30

The OXWELD CM-30 Portable Cutting Machine is for cutting straight lines and bevels on metals up to 4 in. thick. It also will cut circles from 2¾ to 96 in. in diameter, and can be hand guided for simple shapes.

Convenient to Use

The CM-30 can be operated either on lightweight track for straight-line cutting, or on the work itself for cutting circles.

Write for a descriptive folder.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
30 E. 42nd St., New York 17, N. Y. UCC Offices in Other Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto

▼ REFFITT—identify by IEN-11576 if you write the maker ▼

▼ REPRINT—Identify by IEN-11577 if you write the maker ▼

Fastening sheet metal to wood . . . to masonry?

For the better way . . . rely on P-K

Hardened SCREWNAILS

Screw strength and nail speed in one fastening — makes sense, doesn't it? Yes, and it saves time and materials, too. Parker-Kalon Screwnails are hardened — pierce metal that would bend ordinary nails. And they have over four times the holding power — that means fewer screwnails are needed to do the job.

Hardened MASONRY NAILS

Too costly drive them with a hammer into a drilled hole of the proper size. Saves work, time and money. Parker-Kalon Hardened Masonry Nails can be applied more quickly than lead anchors and expansion bolts, hold securely and cost less. In softer masonry, these simpler, speedier fasteners can be driven without holes.

PARKER-KALON
FASTENING DEVICES
MAKERS OF THE ORIGINAL SELF-TAPPING SCREWS

▼ REPRINT—Identify by IEN-11578 if you write the maker ▼

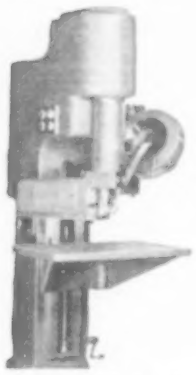
Have You An Assembly Problem?

LET OUR SPECIALISTS HELP YOU

Are you still using slow uphill hand methods that keep your assembly department in low gear and labor costs in high? Discard them and get on to the rapid straight-away of speedy, inexpensive production offered by D.P.S. power-driven machines.

DETROIT POWER SCREWDRIVERS

Drive screws as fast as one a second—all types of screws—no marring of heads or stripping threads—all screws driven to uniform tension—stopped full—SCREWS ALWAYS IN SIGHT OF OPERATOR—3 models, one to fit your requirements.

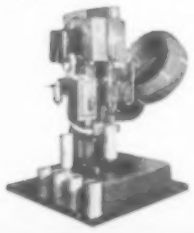


DETROIT POWER NUT DRIVER

A revolutionary new machine that drives nuts with amazing speed, either semi-automatically, or it can be adapted to full automatic operation entirely eliminating the manual handling of nuts. Capacity, nuts, ¼" min. to ¾" max. across flats.

THE HOPPER UNIT

Motorized—Highly Adaptable—A semi-free feeding device whereby production parts are selected, oriented and fed in a given position for primary and second-ary operations.



SPECIAL ASSEMBLING MACHINES

For light assembly operations using Hopper Units to feed component parts.

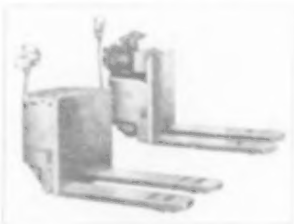
Write for Catalog

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

▼ REPRINT—Identify by IEN-11580 if you write the maker ▼

TRUCK . . Battery or engine drive for pallet mounted loads to 3 ton

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



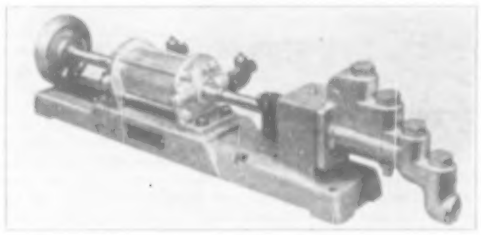
Electro-Lift with a battery powered electric motor mounted in the 14 in. drive wheel and Hydro-Lift with a hydraulic motor in the wheel and an engine driven pump are now assembling in the company's industrial truck line. Both rate 3 ton and are equipped with hydraulic lift action to pick up and lower a loaded pallet. Controls for two-speed travel movement in forward and reverse directions, for steering and for lift and lower action centers at the end of the steering handle. Interlocks prevent wrong action.

The electric motor or the vane-type constant-displacement hydraulic motor are mounted within the driving and steering wheel assembly where they are geared down for required speed and for mechanical advantage. Both are capable of operating the truck up ramps as well as along level floors. The electric motor rates 1¼ hp. The hydraulic variable-delivery pump for the hydraulic motor is driven by a 2-cylinder air-cooled gasoline engine rated at 5½ hp. at 2,800 rpm. The pump rates to 15 gpm. with displacement responding automatically to pressure requirements the displacement increasing as the pressure decreases. The company offers a descriptive booklet containing detail information on the new models.

▼ REPRINT—Identify by IEN-11581 if you write the maker ▼

FEEDING . . Pneumatic metering pump, .4 to 34.4 gph., 3,650 to 125 pounds

Source: MILTON ROY CO.
1303 E. Mermaid Lane, Philadelphia 18, Pa.



New design known as aiROY, has been added to the aiROYmetric pneumatic metering pump previously advertised IEN-5025-50. The new unit is a simplified assembly of the previous one and adds a range of capacities between .4 and 34.4 gph. with 2 or 4 in. stroke, 2 or 3 in. air cylinders and 60 lb. air pressure. Stroke length can be adjusted while operating.

Liquid ends are the same as for the aiROYmetric pumps with the double check balls on intake and discharge and availability in any metal that can be machined to meet given service requirements. The design is characterized by the fact that the check balls are self-seating and that the pump action completely scavenges the displacement chamber on each stroke. Detail information on this and other pumps in the line is included in illustrated 16 page Bulletin 400.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ REPRINT—Identify by IEN-11582 if you write the maker ▼

The Most Versatile Chuck You Can Buy!

FIRST CHUCK ADVANCE IN 50 YEARS!

Operating principle is simple, however, but simple. Patent "A" moves jaws in or out to grip work like any other chuck. Applied screws "B" bring work to dead center. So sure that inexperienced men can center work within .005 in 5 minutes! Once set dead true, you can machine hundreds of duplicate parts without changing adjustment.

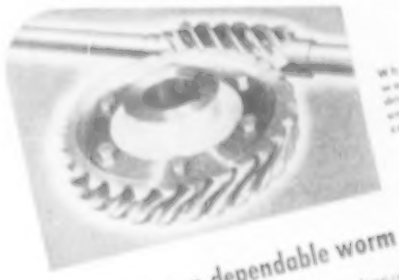
Buck ADJUST-TRU CHUCKS

1. .0005 Precision with quick chuck speed!
2. Collet and Step-Collet footstock at quick chuck cost!
3. New in jaw chucks and most needs for Hub Arbors and Mandrels!
4. Compensates for spindle run-out to lengthen useful life of old machines!

Buck Adjust-Tru Chucks are man-hour savers on any production team. Bring new speed in setting to dead true, plus spindle collet capacity from ¼" to 1½" by .001, plus step collet capacity of ½" to 5" by .001 (on 6" chucks). Do work of special equipment worth $250 to $1,000 *at ordinary scroll chuck prices—in much less time.* Send for literature today

BUCK TOOL CO., 1216 Schippers Lane, Kalamazoo, Mich.

▼ REPRINT—Identify by IEN-11583 if you write the maker ▼



Whether you want standard drives or special units, Cleveland can serve you.

Prompt service on dependable worm gearing

CLEVELAND offers a complete line of worm-gear sets and speed reducers, including the popular Ten-cooled Speed-ster, to meet the needs of any machinery or equipment builder or user.

Representatives in all major industrial centers are at your service.

Write for the latest Cleveland catalog, indicating your requirements. Your inquiry will receive prompt attention.

The Cleveland Worm & Gear Company, 5298 East 80th Street, Cleveland 4, Ohio.

CLEVELAND Worm Gear Drives

▼ REPRINT—Identify by IEN-11584 if you write the maker ▼

New Farval Spray Valve

METERS LUBRICANTS TO SLIDE SURFACES AND OPEN GEARING

Write for this FREE bulletin

By an ingenious adaptation of the familiar Farval Dualine Valve, lube grease or oil is spraied through a nozzle—onto any desired area, to any amount, at any interval.

The new Farval Spray Valve can be added to a regular Farval Duplex Lubrication System wherever compressed air is available—or a complete system of spray valves may be installed, served by either manual or automatic pumping unit.

Farval Spray Valves have been thoroughly tested in service on a wide variety of machines and equipments, supplying lubricant efficiently, economically and safely to open gearing, slide surfaces and other areas where Farval closed systems are not readily adaptable.

For full description with diagrams, get Farval Bulletin No. 60. The Farval Corporation, 5298 East 80th Street, Cleveland 4, Ohio.

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

▼ REPRINT—Identify by IEN-11585 if you write the maker ▼

Protect HYDRAULIC EQUIPMENT WITH HIGH PRESSURE MICRONIC FILTERS

- 3000 p.s.i. Operating Pressure, Micronic Filtration, Low Pressure differential, Compact in Line Type

- Maximum Protection at minimum cost. Replaceable element.

West Coast: H. E. Webb
918 N. Kenilworth Ave., Glendale, Calif.

WATERMAN ENGINEERING *Company*
721 CHESTER AVENUE • EVANSTON, ILLINOIS

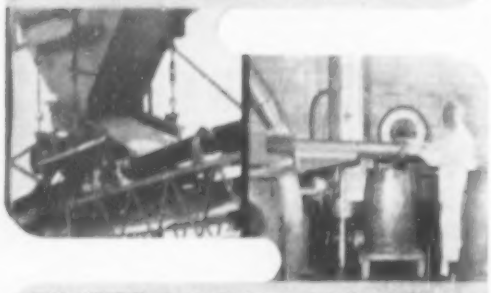
▼ REFER—Identify by IEN-11586 if you write the maker ▼

SYNTRON

"Vibra-Flow"

VIBRATORY FEEDERS

With Variable Control of the Rate of Flow



WILL HANDLE—most all types of bulk materials—from light, fine dry powders to heavy, coarse lumps—hot or cold—dry or damp. **AT**—variably controlled rates from pounds to hundreds of tons per hour—from 110, 220 or 440 volt, 50 or 60 cycle. **TO**—crushers, grinders, driers, furnaces, packaging machines, belts, mixers, etc.

WRITE TO

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

▼ REFER—Identify by IEN-11587 if you write the maker ▼

WAGNER Unit Substation Transformers

the *Vital* part of any Unit Substation

You can be sure of a dependable continuous flow of power from a Wagner transformer and you can be sure that it has been carefully designed to meet your distribution requirements.

Wagner unit substation transformers with incoming high voltage switch sections to meet your requirements, and with proper throats on the secondary side for connection to any make of switchgear, are available in the usual range of ratings up to 2000 kva.

Wagner unit substation transformers can be throat connected to any make of switchgear.

Our tree bulletins TU-13 and TU-56 describe the design and construction features that make Wagner liquid-filled and dry-type unit substation transformers outstanding.

Wagner Electric Corporation
6414 PLYMOUTH AVE., ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

▼ REFER—Identify by IEN-11588 if you write the maker ▼

BIN-LEVEL CONTROLS

2 BIN-DICATORS
Often Replace 1 Man

BIN-FLO
Aerating Units Keep Finely-Ground Materials Moving

ECONOMICAL MATERIAL CONTROL

DEPENDABLE BIN-LEVEL INDICATION

Mail This Coupon

THE BIN-DICATOR CO., 13946 Kercheval, Detroit 15, Mich.

Please send new 20 page catalog giving complete information and specifications on BIN-DICATORS. Also please send information on BIN-FLO Aerating Units.

Name _____

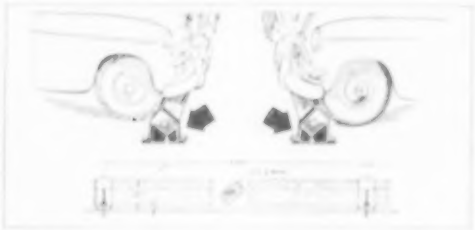
Address _____

City _____ Zone _____ State _____

▼ REFER—Identify by IEN-11589 if you write the maker ▼

PROTECTING . . Yard bumper barrier for even parking, property protection

Source: HARRIS BARRIER CORP.
2097-101 N. Montcalm St., Indianapolis 23, Ind.



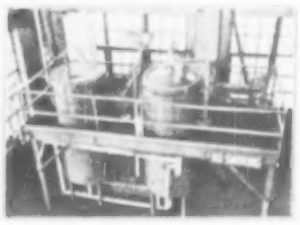
Har Bar (trade name) new parking bumper barrier for motor vehicles. It is made of cast aluminum saddles on 8-ft. spacings in standard design and wood timbers that ride in the saddle openings. Three sizes take 4 by 4-in., 4 by 6-in. and 6 by 6-in. timbers. Position above the ground is high enough to stop a vehicle, low enough to miss the bumper.

There is no problem of drainage, no rotting since the timbers do not touch the ground and cleaning is made easy by the arrangement. Installation is by driving ½ by 12-in. to ¾ by 18-in. anchor pins into the ground or through concrete or asphalt. List price is $10 to $15 in units of 1 to 10 including the wood. The user deducts $2 to $3 per unit if he supplies the wood.

▼ REFER—Identify by IEN-11590 if you write the maker ▼

PROCESSING . . Impregnating tanks for hot or cold, vacuum or pressure use

Source: STRUTHERS WELLS CORP.
1001-5 Pennsylvania Ave., Warren, Pa.



New design in the company's line of impregnating equipment is shown in the illustration for application on carbon electrodes. The new equipment employs vacuum, heat and pressure to force a binder into the porous electrode structure. The assembly features pushbutton control to release and open or close and lock the cover over the impregnating chamber. The binder is held in liquid form in the tank adjacent to the impregnator itself. Suitable equipment provides for heating and for application of vacuum and pressure.

The equipment is typical of assemblies the company is prepared to supply for specified use in coil assemblies in electrical apparatus, on wood parts to water proof, increase density, simulate more expensive materials, on cloth and rope, on oil-impregnated bearings to force the oil into the porous structure, on castings to seal porous areas. Standard tanks range from 18 by 24 in. to 72 by 96 in. in diameter and height as listed. Illustrated and described in 8 page Bulletin B-90.

All Makers of Their Kind And All Other Products Are Listed In THOMAS' REGISTER — Descriptions — Ratings — See Page 50

FIND WHAT YOU WANT?
Check the hundreds of listings in the Index, page 102

▼ REFER—Identify by IEN-11591 if you write the maker ▼

Specially Designed! Specially Built! ALL PURPOSE CASTER

Here it is! Albion Industries' Series 11 All-Purpose caster for light and medium duty service under all conditions. Ideal for those hundreds of caster applications in your plant. Series 11's are unbeatable — and they cost less than you think.

Drop forged steel top plate, rolled-in and hardened raceways, and formed all-steel legs welded to yoke. Wheel sizes 4", 5", 6" and 8". Metal, rubber and Texite wheels.

Write for catalog showing full line of casters

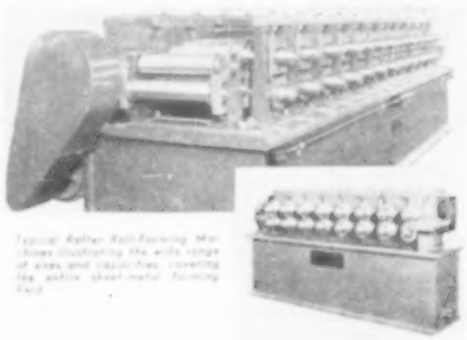
PROMPT DELIVERY

ALBION INDUSTRIES, Inc.
ALBION, MICHIGAN

▼ REFER—Identify by IEN-11592 if you write the maker ▼

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities covering the entire sheet metal forming field

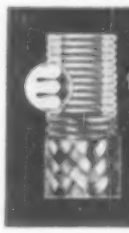
Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greater vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9; N. J.
GANG SLITTERS and PRESS BRAKE DIES

▼ REFER—Identify by IEN-11593 if you write the maker ▼

CMH REX-WELD

corrugated flexible metal hose



the answer to leakproof conveyance of high pressure, high temperature liquids and gases

REX-WELD is manufactured in both bronze and steel with helical or annular corrugations, braided or unbraided. It is particularly suited for installations where vibration is a problem or where hose is subjected to prolonged flexing or bending.

The range of applications for REX-WELD is virtually unlimited. It is capable of handling pressures to 6000 psi and temperatures to 1000° F. Leakproof, even for searching liquids and gases.

Write for complete data

CMH CHICAGO METAL HOSE CORPORATION
MAYWOOD, ILLINOIS
1333 S. Third Ave., Maywood, Elgin and Rock Falls, Illinois
In Canada: Canadian Metal Hose Company, Limited, Brampton, Ontario

▼ REFER—Identify by IEN-11594 if you write the maker ▼

A Pure Metallic Lead Base Sealing Compound

A Perfect Compound for All Types of Threads and Press Fits

Seals . . . threaded and flanged pipe connections for air, gasoline, steam, acids, hydrocarbons, oil, water.

Lubricates . . . acts as a protect against threaded wear and assist in fitting.

Minimizes . . . time and labor in packing pipe joints and casing and preventing leaks.

Prevents . . . seizing and scoring, between metals and rust, fatigue or temperature and pressure.

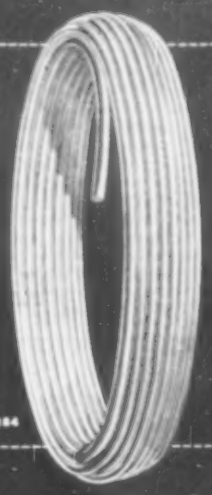
See your supply dealer or write for literature and prices.

I. H. GRANCELL
1601 E. NADEAU ST., LOS ANGELES 1, CALIFORNIA

▼ BREVITY—Identify by IEN-11595 if you write the maker ▼

Extruded and Drawn

COLD HEADING WIRE



Yellow Brass
Cartridge Brass
Commercial Bronze
Red Brass
Phosphor Bronze
Nickel Silver
Everdur*

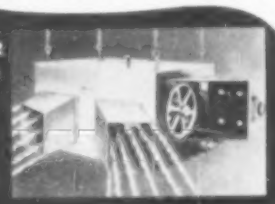
Address inquiries to:
THE AMERICAN BRASS COMPANY
Waterbury 20, Conn.

49284

*Reg. U. S. Pat. Off. **ANACONDA**

▼ BREVITY—Identify by IEN-11596 if you write the maker ▼

HERE'S YOUR ANSWER TO LARGE AREA **SPACE HEATING!**



CHROMALOX *Blower Type* UNIT HEATERS

FOR HEAVY-DUTY HEATING IN FACTORIES, WAREHOUSES, OFFICES

Ceiling mounted CHROMALOX Electric Blower-Type Heaters are your quick, silly answer to space heating! Twin centrifugal fans, driven by a 3-phase motor, distribute warmth evenly over large areas. Air ducts can be used to convey heated air to distant locations. Automatic thermal cutout assures protection against overheating. 51,180 to 136,480 BTU output per hour.

HAVE A HEATING PROBLEM OF ANY KIND?

Then write for Catalog 50.90 loaded with information on many of the 15,000 types, sizes and ratings of Chromalox Heating Units and Equipment.

EDWIN L. WIEGAND CO., 7606 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Electric Heating Units Advertisement, Page 1

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

▼ BREVITY—Identify by IEN-11597 if you write the maker ▼

NEW IMPREGNATED FELT GASKETING MATERIAL

PREVENTS CORROSION AND ELECTROLYSIS

SEALS AGAINST DUST, WIND & WATER

CHROME LOCK consists of a high grade felt, impregnated with a specially formulated blend of permanently thermoplastic resins, plasticizers, inert pigments and rheostate. Prevents corrosion in original installations — stops corrosion when applied to rusty joints. Chrome Lock also inhibits electrolytic action between dissimilar metals.

CHROME LOCK has outstanding self-sealing qualities and will not deteriorate. Tests prove Chrome Lock far outlasts rubber. Chrome Lock is the ideal seal wherever anti-corrosion, anti-electrolysis and anti-aging properties are required! Read these added features:

★ EASY TO APPLY
★ ANTI-WICKING
★ LIGHTER FLANGING MATERIALS
★ MANY TYPES
★ MANY SIZES
★ CUT GASKETS
★ NATIONWIDE SERVICE

Write for Data on Chrome Lock Gasketing

SPRING PACKING CORPORATION
232 S. MICHIGAN AVE. • CHICAGO 4, ILLINOIS

▼ BREVITY—Identify by IEN-11598 if you write the maker ▼

BENDING . . Pneumatic machine for 1¼ in. 16 gage tube or equivalent

Source: PAUL MACHINE TOOL & DIE WORKS
4602 S. Kedzie Ave., Dept. B-1, Chicago 32, Ill.

Bend-Ex Model A is a new air-operated design in the company's line of bending machines in which control centers at a single pneumatic valve, following initial setup. The machine mounts a 10-position indexing turret that can be adjusted to control length between successive bends. It employs a power-operated vlamp that grips the work, just prior to starting the bend, when the air-valve is operated.

The machine will make bends to a 9⅝-in. radius measured on the center line. It calls for 80-lb. air pressure in its Hanna air cylinder. It handles tube lengths to 10½ feet. As many as 1,000 bends can be made in an hour. List price is $1,020.

▼ BREVITY—Identify by IEN-11599 if you write the maker ▼

INSULATING . . Impregnating varnish for electrical uses to minus 70 deg. F.

Source: FREDERICK S. BACON LABORATORIES
190-94 Pleasant St., Watertown 72, Mass.

Packaged in 8 ounce units

ABC Impregnating designates new insulating varnish for use on electrical equipment to be subjected to temperatures as low as minus 70 deg. F. It is particularly suited for electronic equipment employed in aircraft. It is a three-part product that remains stable in cold storage for four months. Pot life after mixing is 24 hours.

Dielectric strength is 500 volts/mil based on ⅛ in. thickness. Dielectric constant is 3.5 with power factor at 400 and loss factor at 60, all based on 60 cycles. Application involves curing at 150 deg. F. and baking at 212 deg. F. each for 1 hour.

▼ BREVITY—Identify by IEN-11600 if you write the maker ▼

PROTECTING . . Canvas glove, neoprene coated, gauntlet or knit wrist

Source: PIONEER RUBBER CO.
240-44 Tiffin Road, Willard, Ohio

Extra-Duty, with red neoprene coating, Heavy-Duty and Super-Duty with black coating have been added to the company's line of coated canvas work gloves. Fingers are curved. Linings are made of 8-oz. carbon flannel. The Extra-Duty units are colored red as a warning signal of hand danger. The Super-Duty design is neoprene-impregnated for resistance to abrasion.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 10

▼ BREVITY—Identify by IEN-11601 if you write the maker ▼

SAFETY EQUIPMENT FOR ALL INDUSTRIES

SAVES TIME & PREVENTS INJURIES

A speed up tool for lifting, feeding and positioning blanks of metal and other materials in stamping machines and die presses without inserting the hands or fingers within the danger zone . . . Used for separating sheets, transferring from piles or stacks . . . Many other uses on all non-porous materials.

Write for Bulletin F 1250

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

▼ BREVITY—Identify by IEN-11602 if you write the maker ▼

SAVE WITH MACHINE BUNDLING

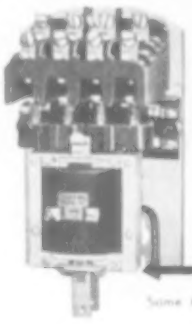
Machine bundling of packages offers tremendous savings over the use of expensive cardboard boxes. Material costs alone are cut 25 to 40%. Labor and shipping costs go down too.

Our Model F-10-J, illustrated, is specially designed for bundling small size packages in strong kraft paper. Packages may be grouped in various ways and the machine is also adjustable for many sizes. The F-10-J is only two-thirds as large as our F-10 model and the price is lower.

Get the cost-cutting facts by writing for literature on the Model F-10-J.

PACKAGE MACHINERY COMPANY
SPRINGFIELD MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS
DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · MEXICO, D.F.

▼ BREVITY—Identify by IEN-11603 if you write the maker ▼



Some Mounting on AC Contactor

New DC SOLENOID CONTACTOR

saves installation time

Now it's no longer necessary to drill special holes and provide special insulation for a DC contactor.

Ward Leonard's new DC Solenoid Contactors fit standard AC contactor mountings. Metal base plates . . . *unit-insulated* . . . components interchangeable with AC contactors.

Write for Bulletin 1950. WARD LEONARD ELECTRIC CO., 55 South St., Mount Vernon, N.Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

▼ BREVITY—Identify by IEN-11604 if you write the maker ▼

SIGNODE TOOLS

FOR STRAPPING SMALL BUNDLES

★ Here are typical examples of Signode's leadership in steel strapping tool development—the Signode Push Type Sealer and Special Sealer. These companion tools are especially designed for the strapping of small, round and non-compressible bundles such as pipe, dowels, moulding and small wooden boxes. Other Signode tools, just as efficient and modern, are available for every strapping need. Mail coupon for further interesting information.

SIGNODE STEEL STRAPPING CO.
2611 N. Western Ave., Chicago 47
Rush my Copy of "Guide to Better Packing and Shipping Methods," giving details on strapping tools shown above.

Name
Address
City State

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

▼ RAFFITT—Identify by IEN-11605 if you write the maker ▼

NEW! ....in the 6" size

$67.50 WITH CARRYING CASE

Stanley safety saw W-65

This new, value-packed 6" saw features a multi-grip handle and a quick set tilting adjustment to permit easy beveling to 45°. Cuts from ⅛" to 2". Safety guard telescopes into top, and is fitted with finger knob for safe, natural control. Other features include helical gears, full ball and roller bearings. Operates on A.C. or D.C. in any standard voltage. Supplied with combination rip and cross-cut blade, wrenches, lubricant, and steel carrying case. See the W-65 at your dealer's or write for literature. Stanley Electric Tools, 508 Myrtle St., New Britain, Connecticut.

STANLEY

HARDWARE • TOOLS
ELECTRIC TOOLS
STEEL STRAPPING • STEEL

▼ RAFFITT—Identify by IEN-11606 if you write the maker ▼

• In Chicago Automatic Rivet Setters from 1 to 4 tubular or split rivets are fed, inserted and clinched in a fraction of a second with each operating pedal release. Adjustment on some models permits handling different sizes of rivets. Riveting machine also adaptable for eyelets, grommets or drive screws.

FREE *Fastening Analysis*
Your output may be increased and cost reduced if you investigate. Send sample assembly and blue print.

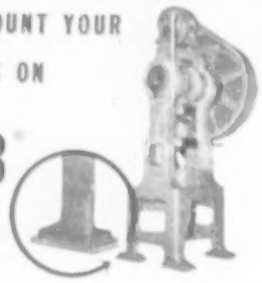
Chicago Rivet
CHICAGO RIVET & MACHINE CO.
9802 W. Jackson Blvd., Bellwood, Ill. CHICAGO SUBURB
Tubular and Split Rivets In All Rivet Metals

▼ RAFFITT—Identify by IEN-11607 if you write the maker ▼

No Floor Damage!

WHEN YOU MOUNT YOUR MACHINES ON

UNISORB



UNISORB-Mounting requires no bolts . . . no lag screws . . . no old-fashioned, destructive floor drilling. A special cement (we supply it) binds the UNISORB pads to machine feet and floor with a holding strength of 1500 p. s. i. *minimum!* What's more, UNISORB absorbs from 60% to 85% of transmitted machine vibration and noise . . . saves floors, buildings, machinery . . . often permits higher machine speed. Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company
210-1 SOUTH STREET
BOSTON 11, MASS.

▼ RAFFITT—Identify by IEN-11608 if you write the maker ▼

DRIVE . . Motor operated actuator rates 200 lb. thrust and 100 lb. pull

Source: HYDRO-AIRE INC.
3002 Winona Ave., Burbank, Calif.

The motor in this new No. 3540 actuator is a 110-volt 400-cycle ac. unit. It is geared to the main operating plunger to provide a stroke that is adjustable between ½ and a little over 2¼ inches. Operating time in either push or pull direction is 8 seconds. Maximum current drain is 22 amperes. An integral brake stops movement instantly on opening the motor circuit. Duty cycle is 1 min. on and 15 min. off.

Chief characteristic of the unit is its ability to operate satisfactorily in a temperature range between minus 100 and plus 165 deg. F. List price of the assembly is $130.

▼ RAFFITT—Identify by IEN-11609 if you write the maker ▼

DRYING . . Electric oven for paint drying, product dehydrating

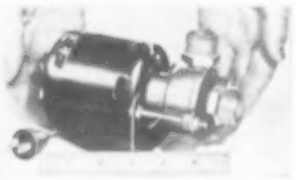
Source: GRIEVE-HENDRY CO.
1103 N. Paulina St., Chicago 22, Ill.

Operation is on 110-volt 60-cycle ac. for this electric oven which is now available for general use following initial development for repair shops and for business machine makers. The oven measures 30 by 25 by 21 inches. It is fitted with a motor-driven circulating fan, a removable shelf and a drip pan. It can be brought up to 225 deg. F. in 15 min. following a cold start. Operating range is 180 to 325 deg. F. Asbestos aircell insulation is employed in the walls and top. List price is about $75 to $80.

▼ RAFFITT—Identify by IEN-11610 if you write the maker ▼

PUMP . . Rubber impeller centrifugal rates 8 gpm. at 2-ft. head, bronze body

Source: SAMUEL S. GELBER CO.
160-64 N. Clinton St., Chicago 6, Ill.

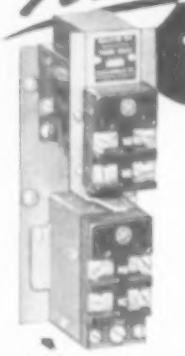


Patent has been applied for on the company's new double-blade rubber-impeller centrifugal pump which has been developed for application on equipment such as evaporative coolers, washing machines, beverage dispensers, recirculating heaters. The pump is made with a bronze body and is mounted on a 1/30 or 1/20 hp. motor for operation on 110-volt 60-cycle ac. Clearance in the housing permits passing solids in the fluid.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ RAFFITT—Identify by IEN-11611 if you write the maker ▼

New... BULLETIN 849 PNEUMATIC TIMING RELAY



A-C Timer with Auxiliary Contacts
D-C Timer

Good for Millions of Operations

- For "dash up" or "dash down" operation
- Available for NEMA Type 1, 4, 7 and 9 applications

This new compact, solenoid type, pneumatic timing relay utilizes a resilient rubber bellows for controlling the tripping time. Has a range of from 10 cycles to 3 minutes, and an accuracy of approximately 10%. Its setting is easily adjustable over a wide range, and the time levels instantaneously. This timer will provide satisfactory operation irrespective of temperature, humidity or vibration conditions. Write for information. Allen-Bradley Co., 1311 S. 2nd St., Milwaukee 4, Wis.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

▼ RAFFITT—Identify by IEN-11612 if you write the maker ▼

The Essentials of Sound Weighing . . .

There are three essentials for good weighing. They are (1) Accuracy . . . which eliminates waste from overweight, also protects you against underweight. (2) Scales to fit the Operation . . . they save time and labor cost factors. (3) Speed of Operation . . . weighing equipment geared to keep pace with allied equipment used. These are the essentials that control costs and in turn these are the factors we consider when EXACT WEIGHT Scales are built. The fact that thousands of these famous scales are in use in every major industry in America proves we believe that these weighing units produce better goods easier, faster, cheaper and more profitably for the user. Write for details for your business.

EXACT WEIGHT SCALES
Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

▼ RAFFITT—Identify by IEN-11613 if you write the maker ▼

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. . . for reproducing drawings, specifications, reports!

PERFECT FOR ENGINEERS

Ozalid is a speedy copying process that reproduces anything drawn, typed or written. No redrawing necessary for design changes, alterations or additions—simply make changes on an Ozalid "intermediate" copy. This is used to make desired number of Ozalid prints you need.

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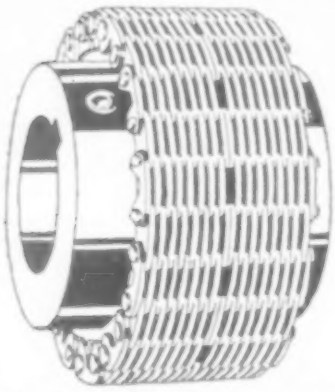
A Division of General Aniline & Film Corporation
"From Research to Reality"

▼ RAFFITT—Identify by IEN-11614 if you write the maker ▼

RAMSEY COUPLINGS



An all metal product with flexibility attained through design rather than materials. Simple, sturdy, compact. Easily installed. Eleven sizes available for wide range of loads. Protective aluminum covers. Shipments from stock. Send for literature giving dimensions, capacities, prices, etc.

RAMSEY CHAIN COMPANY, INC.
5052 BROADWAY, ALBANY, N. Y.

▼ BREFITT—Identify by IEN-11615 if you write the maker ▼

The
AIR CYLINDERS

It's MUSCLE you need!

AIR CYLINDERS

Are all Muscle. No Useless Frills! JLE Air Cylinders invite cost comparison . . . tell us the size cylinder you're interested in or are using and we'll give you JLE's cost figures for comparison.

JLE Air Cylinders are made to any stroke in standard bore sizes from ½" to 10". Top operating pressure 150 lbs. per sq. in. Single or double acting. Choice of four standard mountings and of end cushioning.

Distributor Territories Open. Best Outs Going Fast. Write For Your Qualifications NOW!

JAMES L. ENTWISTLE CO.

420 CHURCH STREET · PAWTUCKET, RHODE ISLAND

▼ BREFITT—Identify by IEN-11616 if you write the maker ▼

Greater capacity
in existing conduit with
DENSHEATH
small diameter wire

DENSHEATH*
(Type TW) Thermoplastic covering
will not support combustion. Resists acids, oil, alkalies, moisture. Easy to pull, resists abrasion. Code-approved for 600 V., 140°F.

Write for Building Wire Catalog C-67. Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

the right wire for the job ANACONDA WIRE AND CABLE

*Reg. U. S. Pat. Off.

▼ BREFITT—Identify by IEN-11617 if you write the maker ▼

PHILADELPHIA
FOR

All Types . . .
All Sizes . . .
All Ratios in . . .

SPEED REDUCERS

We design and make every type of speed reducer . . . Worm, Herringbone, Spiral-Bevel, Herringbone, Spur, Planetary, etc. This is important because . . . 1. Assures unbiased recommendations . . . 2. Permits filling all needs from one source . . . 3. Places responsibility for satisfactory operation upon the shoulders of one manufacturer.

Complete catalogs on any type Reducer sent upon request on your Business Letterhead.

PHILADELPHIA GEAR WORKS, Inc.
Industrial Gears and Speed Reducers
Erie Avenue and G Street Philadelphia 34, Pa.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON
In Canada: William and J. G. Greey Limited, Toronto

▼ BREFITT—Identify by IEN-11618 if you write the maker ▼

TAPE . . Self-adhesive cellophane is transparent, adhesive on both faces

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

No. 666 is a new Scotch brand transparent cellophane tape that carries pressure-sensitive adhesive on both faces. It is available in five widths between ¼ and 1 in. from stock in rolls measuring 108 ft. in length. Thickness is 4½ mils. The tape adheres to glass, metal, paper, wood and most plastics.

Applications include splicing paper invisibly, joining plastic sheeting, mounting cards and objects on glass surfaces, attaching riders to business papers, securing decorative parts in packaging, assembling two photographic negatives. A sample roll is available to test its application possibilities.

▼ BREFITT—Identify by IEN-11619 if you write the maker ▼

MOTOR CONTROL . . For small motors mounts light to signal closed circuit

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Particularly for appliance motors

New design of the company's toggle-switch manual motor starter now includes a light built into its rectangular die-cast housing to signal when the starter circuit is closed and its motor running. The new design is known as the Motor Sentinel Class 10463. It is, in effect, a double-pole switch with rating to 1 hp. on 220-volt ac. or dc.

The toggle mechanism is an over-center design for positive action in quick make and break. A bimetallic element affords motor protection. The housing is an NEMA Type-1 enclosure for general-purpose uses as in appliances.

▼ BREFITT—Identify by IEN-11620 if you write the maker ▼

STORING . . Steel cabinet assembles three drawers for small parts

Source: BAY METAL PRODUCTS
3003 N. 16th St., Philadelphia 32, Pa.

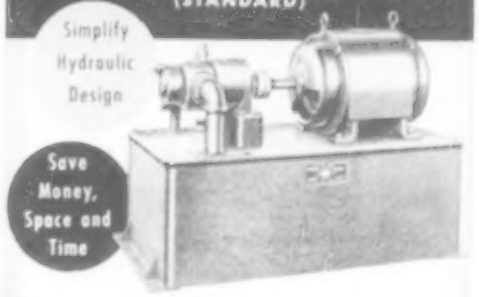
Three drawers measuring 9⅝ by 11¼ by 2¼ in. are assembled in this new steel cabinet. It is 10⅝ in. in width by 11¼ in. in depth by 8¾ in. in height. The drawers are slotted on 1-in. centers. Handles and card holders are welded on the fronts. The assembly includes 27 No. 106 dividers and 36 index cards. Finish is in baked green enamel to match other equipment in the company's line.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

▼ BREFITT—Identify by IEN-11621 if you write the maker ▼

VICKERS Hydraulic POWER UNITS
(STANDARD)

Simplify Hydraulic Design



Save Money, Space and Time

A self-contained power source for the hydraulic system on many types of machinery. Various pump combinations are available with necessary valving, filters, etc. for a wide variety of requirements. Vickers single, double and two-pressure pumps are used for 1000 psi continuous service, two-stage pumps for operating pressure to 2000 psi. Oil reservoir is base for Vickers Motor Pump or Vickers Pump with separate motor drive (shown). Ask for Bulletin 46-43.

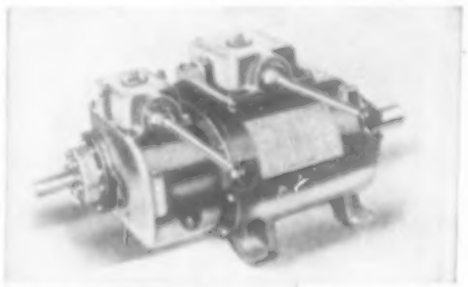
VICKERS Incorporated • Division of The Sperry Corporation
1895 OAKMAN BLVD. • DETROIT 32, MICH.

Write for BULLETIN 46-43

▼ BREFITT—Identify by IEN-11622 if you write the maker ▼

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large vertical drills, flat-bed vertical turret lathes, etc. CAPACITY 10 HP.



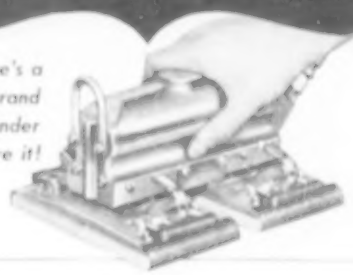
On special machines where transmissions are required . . . a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the back of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys and motors from stock.

up to 50 h. p. WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. 1400 BEAUBIEN · DETROIT · MICHIGAN

▼ BREFITT—Identify by IEN-11623 if you write the maker ▼

Whatever your sanding problem . . . in wood, metal, plastic

. . . there's a Sundstrand Air Sander to solve it!



SUNDSTRAND SANDERS WITH STRAIGHT-LINE ACTION ARE WIDELY USED FOR:

Floor production and maintenance work.
Wood finishing . . . building materials, furniture, cabinets, wood parts, etc.
Finishing metal parts . . . polishing discs.
Plastic and glass finishing.
Truck, car and machinery refinishing.
Cleaning purposes . . . cots, bins, and other containers.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
ROCKFORD, ILLINOIS

▼ BREFITT—Identify by IEN-11624 if you write the maker ▼

FRASSE for Aircraft Steels

Aircraft quality bars, tubes, and sheets in the grades listed below, all to Government specifications, are standard stock items at Frasse.

Bars	Cold Drawn 4130	AN-QQ-S-681a and AN-S-484
Bars	Cold Drawn 4340	AN-QQ-S-756a
Bars	Cold Drawn 8740	AMS-6322
Bars	Stainless Type 347	46-S-18-Ba
Tubes	Cold Drawn 4130	AN-T-69 and AN-WW-T-850
Tubes	Cold Drawn 8630	AN-T-15
Sheets	Normalized 4130	AN-QQ-S-685
Sheets	Annealed 8630	AMS-6355e
Sheets	Stainless Type 347	AN-QQ-S-757

Chemical certification is provided with each shipment and Government inspection is arranged for where required. In addition, Frasse consulting technical service is always available to assist you in the application of these steels. For a quotation on your requirements, write:

Peter A. FRASSE and Co., Inc.
17 Grand St., New York 13, N. Y. 3911 Wissahickon Ave., Phila. 29, Pa.
50 Exchange St., Buffalo 3, N. Y. 157 Richmond Ave., Syracuse 4, N. Y.

▼ BREVITY—Identify by IEN - 11625 if you write the maker ▼

SARCO *Tank* TEMPERATURE REGULATORS

Entirely self-contained and self-operated. Ideal for temperature control of hot water tanks and process work. Operate steam, water, brine or gas valves. Any temperature between 0° and 300°F. Cat.Nos. 600, 650, 700.

SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

▼ BREVITY—Identify by IEN - 11626 if you write the maker ▼

HOW CAN YOU USE this GAST 3 h.p. ROTARY AIR MOTOR?

This style for flange mounting

On your power problem — or those now being designed — you may gain outstanding advantages by using this larger GAST No. 3 Air Motor.

Built on the famous GAST vane type principle, the No. 3 delivers sensible speed power with simple valve control. It's explosion proof — it can't burn out from overloads — and it delivers a smooth 1/3 h.p. at 1500 r.p.m. with a weight of only 23 pounds!

Investigate this simple, compact motor now — it may provide unusual advantages for your application.

SAVE THIS CATALOG FOR FUTURE USE! SHEET 1 FILE

AIR MAY BE YOUR ANSWER!

Write for new bulletin AM-3 and complete specifications — today!

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS
GAST MANUFACTURING CORP., 118 Kirby St., Battle Creek, Mich.

▼ BREVITY—Identify by IEN - 11627 if you write the maker ▼

SCREWS

Machine, Wood, Cap, Lag, Set, Knurled and Thumb Screws

Brass, Bronzes, Aluminum, Monel, Stainless Steels

Large stock ready for immediate delivery from distributors and warehouses in principal cities.

FREE CATALOG

The H. M. Harper Company
2211 Lehigh Ave.
Morton Grove, Ill.

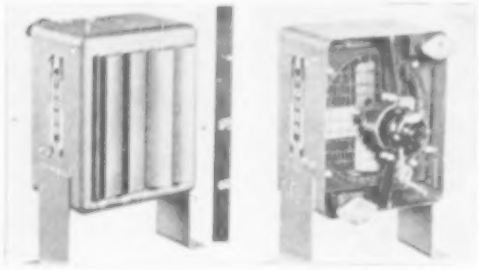
Please send your condensed catalog

Name
Company
Address
City Zone State

▼ BREVITY—Identify by IEN - 11628 if you write the maker ▼

HEATING . . Fan equipped space unit, 572 cfm., employs steam or hot water

Source: YOUNG RADIATOR CO.
719 Marquette St., Racine, Wis.



Steam capacity for this new unit heater is 58,200 btu. per hr. at 5 lb. steam and 60-deg. F. entering air. Hot-water rating is 45,200 btu. per hr. based on 14 gpm. of 200-deg. F. water and 60-deg. F. entering air. The unit has been designed particularly for use in locomotive cabs. It can apply also in small isolated areas in a plant. Overall height on the 6 in. legs is 22 inches. Width is 33 in. and depth over the 1/25-hp. motor at the rear is 17 inches.

Pressed steel housing is equipped with adjustable outlet louvers and mounts the motor-driven fan in a shroud protected by a wire screen at the rear. The heating element includes brass headers and seamless copper finned tubes rated for 5-lb. steam, 200-lb. water and temperature to 230 deg. F. Supply and return fittings at the back of the headers are equipped with 1-in. flanges or for threaded pipe.

▼ BREVITY—Identify by IEN - 11629 if you write the maker ▼

METER . . Accessory parts assist in use of Amprobe volt-ammeter

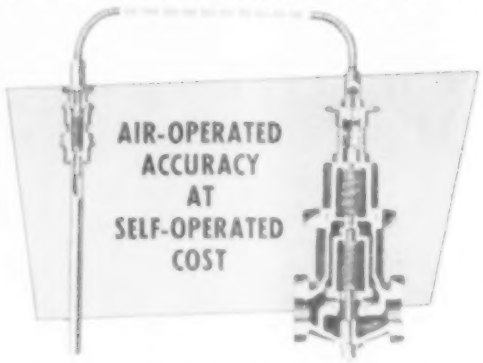
Source: PYRAMID INSTRUMENT CO.
47-51 Howard St., New York 13, N. Y.

New Sensitizer, indicated in the illustration, applies in a line with the Amprobe volt-ammeter, previously described IEN-10855-50. It acts to multiply sensitivity ten times when it is plugged in as shown and the meter applied through its rectangular opening. A motor drawing 7 amp. will then read 1 amp. on the meter scale. The unit has ten precision windings in one arm and is made of molded Bakelite. Capacity is 10 amp. for intermittent use, 2.5 amp. for steady use. List price is $3.75.

Split Plug designates a second accessory not shown in the illustration. It is the same in appearance and application as the Sensitizer. It differs in that it does not include the sensitizing windings. It is plugged in between equipment to be checked and an outlet to separate the conductors without touching the wires. Rating is 30 amp. intermittent, 15 amp. continuous. List price for this accessory is about $2.

All Makers of Items And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11630 if you write the maker ▼



Self-operated Farris **Stacon Temperature Regulators*** make possible unheard-of control accuracy — **to within plus or minus 1 deg.** How? Because liquid in the bulb flashes to vapor in power bellows. Steam does 99 percent of the work — instantly. Balancing bellows eliminates spring, compression and packing glands — precisely regulates to extremely close temperatures — provides free floating valve disc.

Compact, trouble-free, dirt-proof, hermetically sealed Stacon Regulators operate consistently in the worst possible surroundings—require no maintenance. To learn more about the most sensitive, accurate, economical temperature regulator available, write for Stacon Bulletin 50-1000.

*Patented

Farris Stacon Corp.
432 COMMERCIAL AVE. PALISADES PARK, N. J.

▼ BREVITY—Identify by IEN - 11631 if you write the maker ▼

Picture of a Free Man!

thanks to **CESCO's New #600 AIR-FED HOOD**

Cesco's New #600 AIR-FED HOOD . . . Approved by U. S. Bureau of Mines under "Class C." Respirator for use where toxic dust and fumes are encountered. Operating pressure 5 to 9 pounds.

FREE from weighty, rigid hoods
FREE from hoods with narrow, fixed vision!
FREE from toxic dusts!
FREE from harmful abrasive particles!
FREE from fatiguing, noisy air inlets!
FREE to work better, faster, more safely!

• The exclusive advantages of Cesco's new #600 AIR-FED HOOD are bound to increase worker comfort, safety, and output. It is ideal for lead dusting and other grinding operations, light sandblasting, paint spraying, etc. Write for more detailed information or see your Cesco Distributor.

CHICAGO EYE SHIELD CO., 2326 Warren Blvd., Chicago 12, Illinois

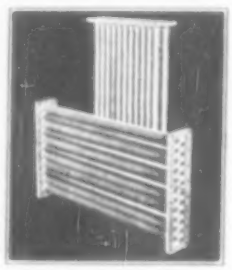
CESCO FOR SAFETY

OFFICES IN
Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Salt Lake City, Seattle, St. Louis, St. Paul, Toledo, Tulsa

▼ BREVITY—Identify by IEN - 11632 if you write the maker ▼

ROME HELICAL-FIN TUBING

Over 90 sizes in Production



Rome extended surface Helical Fin Tubing is a highly efficient, compact surface for heat exchanging work. It is supplied in either straight lengths, coils, or U bends with or without threaded end connections, or it may be used with standard flare connections. It is used for:

- Water Cooled Refrigeration Condensers
- Air Cooled Refrigeration Condensers
- Steam Condensers
- Dry Cleaning Fluid Recovery Condensers
- Air Compressor Intercoolers and Aftercoolers
- Oil Coolers for Diesel Engines
- Fan Type Air Heating Coils
- Fan Type Air Cooling Coils
- Fan Type (Suspended) Unit Heaters
- Refrigeration Evaporators and Brine Cooling Coils
- Turbine Air Surface Coolers
- Room Heating Convectors (Convected Radiation)
- Boiler and Tank Heights Cooling Radiators
- Railway Diesel Engine Cooling Systems

Rome Helical-Fin Tubing is used and specified by nearly all large Nationally known manufacturers of heat exchanging equipment

ROME-TURNEY RADIATOR COMPANY
Mfrs. of Refrigeration Condensers — Concealed Copper Radiation
Rome Air Heating and Cooling Coils and Other Transfer Equipment

200 EAST FRONT STREET ROME, N. Y.

▼ BREVITY—Identify by IEN - 11633 if you write the maker ▼

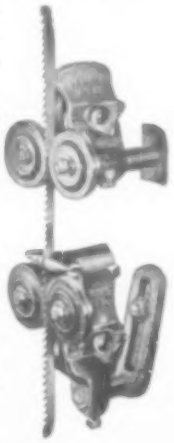
MORE SPEED MORE SUPPORT

IMMEDIATE DELIVERY!

PADDOCK BALL-BEARING BAND SAW GUIDES

You'll find PADDOCK BALL BEARING BAND SAW GUIDES more than pay for themselves in: (1) Reducing blade breakage, (2) Cutting more accurately, (3) Permitting quicker, (4) Speeding up production.

Ball-bearing action, running with blade, gives many advantages over plain guides. Unlike plain guides, they can be adjusted for each single saw blade. Thousands of satisfied users worldwide. Write today for Free Catalog and prices.

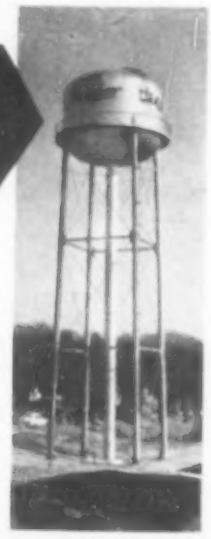


PADDOCK TOOL COMPANY
1418 Walnut Street, Kansas City, Mo.
Guide Makers Since 1920

Paddock BALL-BEARING BAND SAW GUIDES

▼ BREFITT—Identify by IEN - 11634 if you write the maker ▼

BETTER FIRE PROTECTION



A Horton elevated water tank means better fire protection because it provides dependable water service around the clock.

The dangers that pump stoppages or low pressure bring about are eliminated when a Horton elevated tank is installed. The reason is *gravity pressure*.

Horton tanks with ellipsoidal bottoms are built in capacities from 15,000 to 500,000 gallons. Write for information or quotations.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

▼ BREFITT—Identify by IEN - 11635 if you write the maker ▼

Another product designed with Du Pont NEOPRENE

HOW TO SAVE CASH ON THE BARREL HEAD

Slip-on barrel covers of neoprene treated paper will save chemical plant over $50,000 per year

If you transport or store perishable materials in your plant on barrels or drums, chances are you're using wooden heads or metal lids. These require frequent repairs. One chemical plant found it cost $170,000 per year. And they're hard to put on and take off, cause frequent accidents to fingers and thumbs. This is expensive. Now, this same plant is using a new kind of disposable cover that will save between $50,000 and $100,000 annually.

As shown in the illustration, this cover slips on like the familiar refrigerator bowl cover. It's made, however, of a new kind of paper developed by a leading paper manufacturer. The paper is treated with Du Pont neoprene during manufacture and is surprisingly durable. It has exceptional toughness, unusually high wet strength and excellent resistance to acids and alkalies. And it will even withstand pouring rain. The covers have proved so tough that they can be used three or four times.

This paper is also being considered for barrel and bin liners . . . inexpensive tarpaulins for machinery . . . tree wrapping and other nursery uses. It may answer one of your plant or shipping problems. While Du Pont does not market finished products of neoprene, we'll be glad to put you in touch with a supplier. Just write: E. I. du Pont de Nemours & Co., Inc., Rubber Chemicals Division, Wilmington 98, Delaware.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting facts. Does contain specifications of neoprene treated paper, tarpaulins, hoses, gaskets, diaphragms, seals, electrical insulation, etc. Write today for your free copy. E. I. du Pont de Nemours & Co., Inc., Rubber Chemicals Division, 1121 Nemours Bldg., Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

▼ BREFITT—Identify by IEN - 11637 if you write the maker ▼

FORMING . . Conical roll machine for sheet metal cones, conical shapes

Source: REED ENGINEERING CO.
1005-15 W. Fairview Ave., Carthage, Mo.

The three rolls in this new machine are individually driven and also are individually power adjusted for setups to roll-form sheet metal in any angle between parallel sides and a 45-deg. included angle. The rolls themselves are interchangeable at the front of the machine. Individual units are recommended although one set will handle a range of angular work. The machine measures 8 by 8 by 8 feet. It weighs 13,000 pounds.

▼ BREFITT—Identify by IEN - 11638 if you write the maker ▼

INSULATING . . Laminated plastic can be formed in a press when heated

Source: RICHARDSON CO.
Cooper & Wyoming, Cincinnati 15, Ohio

Particularly good for complete parts

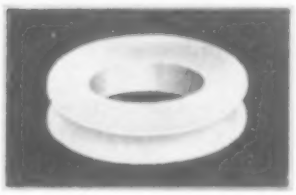
Grade T-812 is a new sheet material in the company's Insulrok line of paper-base phenolic laminate sheet material for application in high-frequency electrical and electronic equipment. The sheet can be formed to intricate shapes in a press when it is worked at 280 to 250 deg. F.

Tensile strength is 10,500 lb. per sq. in. in grain direction based on a 1/8 in. thickness. It is 14,900 lb. per sq. in. across the grain. Dielectric strength is 725 volts per mil for short-time duration. Insulation resistance is 1,000,000 megohms. Moisture absorption is 0.38 per cent in 24 hours. Sheet sizes are 36 by 36 to 72 inches. Thickness can be specified. The company also can supply finished strips and fabricated parts.

▼ BREFITT—Identify by IEN - 11639 if you write the maker ▼

WIRE GUIDE . . Nylon sheave for use in wire processing, resists wear

Source: POLYMER CORP.
405 Walnut St., Reading, Pa.



New sheave is machined from 2 in. nylon rod stock for application in equipment employed to process a specialty wire. The sheave outlasts five steel sheaves previously employed in the assembly of ten on each machine in the process installation. The nylon will not mark the wire as it travels over the sheave.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

▼ BREFITT—Identify by IEN - 11640 if you write the maker ▼

Stanzoils

Grip Oily Things As If Dry!

Liquid-Safe Hands Do Better Work...

Must rubber or neoprene gloves are slippery as wet eels — but not neoprene Stanzoils. Marvelous non-slip nubber finish grips oily work as if dry, gives workers assurance and speed. Made of Du Pont neoprene, these gloves far outlast rubber, protect hands vs harmful materials at extra low cost per day. Stanzoil hand safety pays you in more production, less costly injury claims. Also available in white neoprene. Write today for informative catalog.

Synthetic Rubber Gloves
The Pioneer Rubber Company
635 Tillie Road Willard, Ohio, U. S. A.
Los Angeles

STANZOIL — OVER 30 Years OF QUALITY GLOVE MAKING

▼ BREFITT—Identify by IEN - 11641 if you write the maker ▼

NEW DESIGN FEATURES in this SQUARE D CIRCUIT BREAKER COMBINATION MOTOR STARTER

• Newly designed circuit breaker operating mechanism gives **increased operator safety**.

New design feature, added to time-proven magnetic starter, assures **even longer life**.

Thermal (trouble) Magnetic Circuit breaker is non-tamperable and gives **repeat protection**. Nothing to burn out—nothing to replace.

Write for Bulletin 8539. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin

SQUARE D COMPANY

▼ BREFITT—Identify by IEN - 11642 if you write the maker ▼

You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons — 1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condense and removes destructive water and oil vapors from your air lines.

PROTECTS your lines against rust, scale, corrosion.
PROTECTS air instruments from fouling and nozzles from clogging.
PREVENTS freezing of pipes in winter.
AVOIDS imperfections or spoilage in sprayed finishes.
PROLONGS the life of your pipe lines, air instruments and tools.

Write for new Bulletin 176.

R. P. ADAMS CO., INC. 519 E. PARK DRIVE BUFFALO 17, N. Y.

▼ BREFITT—Identify by IEN - 11643 if you write the maker ▼

Have you ever figured the cost of a SHUTDOWN ...due to electrical cable failure?

Next time you buy electrical cable, figure in your spare time of a breakdown in your plant. Be sure of a single dollar-saving, such as 1 or more hours lost time production—could buy a lot of Okonite-Okoprene cable.

That's why it's a sound policy to get Okonite-Okoprene cable on all control circuits and apparatus leads in your plant. Even though you may pay a bit more at the start, when you buy Okonite-Okoprene you are buying proved security against premature or unexpected cable failure from attack by oil, acid, alkali, moisture, flame or weather.

Write for Bulletin B-2001-O. You will love Okonite-Okoprene. Humidity most causes of cable failure in industrial plants. The Okonite Company, Paterson, N. J.

THE BEST CABLE IS YOUR BEST POLICY
OKONITE insulated wires and cables

▼ BRAVITY—Identify by IEN - 11644 if you write the maker ▼

SYNTRON

DEPENDABLE

ELECTRIC HAMMERS

Save Money and Time! Make the Job Go Faster!

Electromagnetic design has only one working part, the PISTON.

Operate from ordinary 110 volt, 60 cycle light current.

Drill, cut, chip and scale ten times as fast as by hand.

Electric hammer drills for drilling hundreds of holes.

Write for literature

SYNTRON CO.
410 Lexington
Homer City, Pa.

▼ BRAVITY—Identify by IEN - 11645 if you write the maker ▼

Cuts Floor-Cleaning Time 2/3!

Here is a *Finnell Scrubber-Vac, No. 110F*, specially designed for buildings with 2,000 to 15,000 sq. ft. of floor space. Cleans floors in about one-third the time required with a conventional 15 or 18 inch polisher scrubber using separate equipment for pickup. Speeds cleaning by handling four operations in one . . . applies the cleaner, scrubs, rinses if required, and picks up (dump-dries the floor). Also can be used for the dry work (polishing, etc) except. Has 16-inch brush ring . . . is self-propelled. Can be leased or purchased. For free demonstration on your own floors, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell Systems, Inc., 2612 East St., Elkhart, Ind.

FINNELL SYSTEM, INC. *Pioneers and Specialists in* FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES — BRANCHES IN ALL PRINCIPAL CITIES

▼ BRAVITY—Identify by IEN - 11646 if you write the maker ▼

DUMORE DRILL HEAD GIVES 97% Cost Reduction on Tough Job

"Saving on five 12½ hour production on this one operation, repaid the cost of the drill head," says Harold Lemmark, Chief Engineer of Super Precision Products Inc., Green, Ill.

ELD MAT. - 1.245 per price

Problem was to drill 2 holes at an angle thru 1" x 2" x 2½" stainless steel, top of 15° to Rockwell hardness with a No. 56 drill. Maximum production with hand fed press was 16 pieces an hour and operator broke from 11-18 drills per day at 70c per drill.

DUMORE MAT. - 1.2111 per price

With the Dumore Drill Head, Super gets 130 pieces an hour and has eliminated drill breakage and scrap loss.

If you're using No. 46 to ½" drills, it will pay you to get the facts on the New Dumore Drill Head.

Write today for free CATALOG.

The DUMORE Company
1300 17th STREET, RACINE, WISCONSIN
Export Address: 13 E. 40th St., New York, N.Y., U.S.A.

▼ BRAVITY—Identify by IEN - 11647 if you write the maker ▼

DRIVE . . Planetary speed reducer combined with clutch in V-belt sheave

Source: HART REDUCTION PULLEY CO.
2402-6 W. Clybourn St., Milwaukee 3, Wis.

New design of the company's planetary speed reducer, previously described IEN-10207-50, assembles a torque drum with two friction shoes mounted in a lever-operated mechanism in place of the anchoring torque arm employed in the previous unit. The mechanism is anchored to a stationary point on the equipment to be driven.

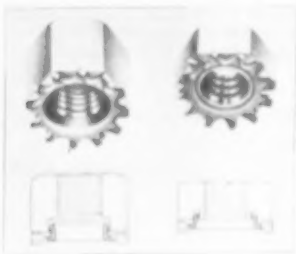
Closing the shoes in on the torque drum acts as a brake to stop drum rotation and lock one side of the otherwise floating planetary so the driving effort will be transmitted. The mechanism also includes a roller that rides into a groove in the torque drum and disengages the friction shoes in the event of overload on the driven equipment.

Speed reduction can be specified in a required ratio between 4:7 and 30:5 to 1 as in the initial design. Overall sheave diameter is 12¾ inches. Installation requires only that the assembly be slipped on the driven shaft, a taper-lock bushing tightened and the anchoring point of the clutch mechanism be secured in place. The assembly is sealed so the hardened-steel gearing can run in oil. Shafts are mounted on anti-friction bearings. A sprocket can be specified in place of the V-belt grooves if a chain drive is desired.

▼ BRAVITY—Identify by IEN - 11648 if you write the maker ▼

FASTENING . . Nut and lock washer are preassembled to apply as a unit

Source: SHAKEPROOF INC.
2503 N. Keeler Ave., Chicago 39, Ill.



Sizes range from No. 6-32 to ½ in. In this new patented assembly of hexagon nut and free-rotating lock washer. The two form an inseparable unit known under the trade name of Keps. Two basic types are the American Standard and Light Nut Series as shown to the left in the illustration with the American Standard Machine Screw Nut and American Regular Nut Series to the right.

The thrust in the lockwasher acts as a guide for quickly centering on a bolt or screw. The nut spins freely on the threads to the point of final tightening where the washer digs in to hold against loosening. The nuts are available direct from the company and also will be manufactured for sale by other fastening producers under license using equipment the company will lease.

Bulletin, "The Facts About Keps", 12 pages, presents illustrated description of the new fastening assembly, includes size tabulations, lists features.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 51

▼ BRAVITY—Identify by IEN - 11649 if you write the maker ▼

New POCKET COMPARATOR

Pays for itself quickly inspecting small parts

PRICE $36.00

A product of BELL & HOWELL CO. distributed by

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.
11320 Madison Avenue Cleveland 2, Ohio

▼ BRAVITY—Identify by IEN - 11650 if you write the maker ▼

"I'll Keep Things Moving For You!—The Boys all like my easy rolling style"

says the Nutting Trucker

A Great Variety of Standard Types

Save lost time, eliminate bottlenecks and wasted motions—increase production capacity by streamlining handling of material with the type of Nutting Trucks suited to your work. For quicker delivery a great variety of standard types are available—bar handle, stake, platform, 2-wheel, box, rack, shelf and many others. Also rubber tired wheels and casters of all sizes for any truck.

Look in your classified phone directory for your local Nutting representative. If not listed write us stating kind of trucks you need.

Write for Bulletin #6G

Our 59th Year

NUTTING TRUCK AND CASTER COMPANY
2011 DIVISION STREET, FARIBAULT, MINNESOTA

▼ BRAVITY—Identify by IEN - 11651 if you write the maker ▼

MARMAN UNIVERSAL

a better clamp ...all around

easy: Easy to install or remove without tools—easy to stock since any size is usable down to a minimum diameter of 11/16". Easy to fit, conforms to all shapes.

vibration proof: Self locking screw prevents loosening of clamps and slipping under all conditions.

corrosion resistant: Stainless steel band and saddle meets U. S. Navy requirements for corrosion resistance.

strong and dependable: Heat treated steel alloy screw . . . wide band . . . stainless steel band clamp can be used over and over.

A better all around clamp

FOR INFORMATION WRITE DEPT. I-12

MARMAN PRODUCTS CO. INC.
940 W. FLORENCE AVE., INGLEWOOD, CALIF.

▼ BRAVITY—Identify by IEN - 11652 if you write the maker ▼

through SPIRATUBE Flexible Tubing

Diameters to 30 inches

SPIRATUBE . . . the new flexible tubing . . . works efficiently both ways . . . blowing . . . exhausting.

A zephyr or a gale . . . you put air where you need it with SPIRATUBE. And SPIRATUBE's neoprene rubber cushion rides with the punch of abrasive solids. It's the new conveying tube of industry.

Every advantage you want . . . bends at any point . . . no ridges inside to obstruct air passage . . . light and easy to carry . . . quick to connect . . . extra strong . . . safe . . . retracts for easy stowage.

Let's discuss your problems . . . no obligation. New Engineering Catalog available. Send for your copy today.

Dept. K

Send for your copy today.

FLEXIBLE TUBING CORPORATION

SPIRATUBE

GUILFORD, CONNECTICUT, U.S.A.

▼ BREVITY—Identify by IEN - 11653 if you write the maker ▼

DIVE DEEP

...into this million-dollar question!

You may come up with

SUNKEN TREASURE that you never knew you had!

HERE'S THE "$1,000,000 QUESTION": *"Can my product be made to COUNT — to the greater profit of its users?"*

Now ask for the answer from a Veeder-Root engineer, experienced in discovering and developing hidden COUNTability in countless products. He'll tell you, quickly and frankly, whether your product has this modern merchandising magic . . . and show how to bring it out. Count on him to show you how to build Veeder-Root Counters into your product as integral parts . . . *and then up you sales will build up!* Write.

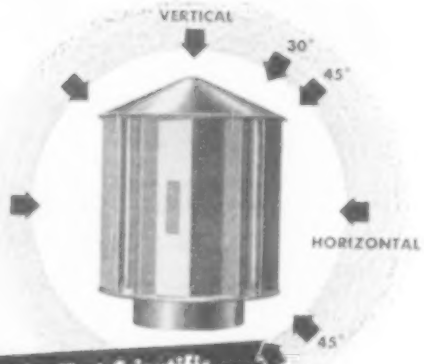
VEEDER-ROOT INC., Hartford 2, Conn.

▼ BREVITY—Identify by IEN - 11654 if you write the maker ▼

CAUTION

To Ventilator Buyers

If you want to *be sure* of what you're getting when you buy ventilators, insist on *certified* capacity ratings based on tests made with wind blowing in *all* directions, as indicated below.



The First Scientific Improvement in Ventilators in over 50 Years!

Breidert Air-X-Hauster Type B

Only such tests can guarantee the capacities a ventilator will deliver under actual operating conditions! Don't be misled into buying on size alone. Insist on the correct size for the capacity required.

The Breidert Air-X-Hauster has been tested by Smith, Emery & Co. of San Francisco, Pacific Coast branch of the Pittsburgh Testing Laboratory, with wind directed at *all* angles shown above. It is the *only* ventilator on the market with published certified ratings based on such tests. Breiderts are extensively used on industrial, commercial and residential buildings all over the country, and on most types of pleasure craft and ships.

For detailed information and free Engineering Data Book on the Breidert, send the coupon.

G. C. BREIDERT CO.

3129 San Fernando Rd., Los Angeles 65, Calif.

Representatives in Principal Cities of the United States

G. C. BREIDERT CO., Dept. E.
3129 San Fernando Road, Los Angeles 65, Calif.

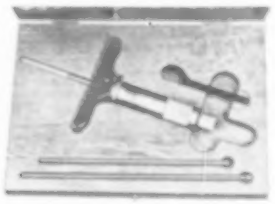
☐ Send name of nearest Breidert representative.
☐ Send Free Engineering Data Book and other literature.

Name .....
Company .....
Street .....
City ..... Zone ..... State .....

▼ BREVITY—Identify by IEN - 11656 if you write the maker ▼

GAGE . . Micrometer depth unit to measure holes, projections, slots

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.



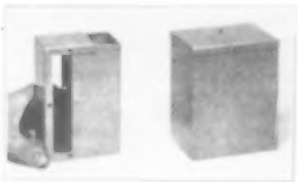
Two ranges in depth measurement are to 3 and to 6 in. with Micrometer No. 440 or No. 445 micrometer gage. No. 440 has a 2-in. base. No. 445 is available with 3, 4 or 5-in. base. All are hardened, ground and lapped. The micrometer screw provides 1 in. of movement. Graduations read in thousandths of an inch.

Interchangeable rods apply for each inch in the overall 3 and 6-in. ranges. A lock nut at the base of the head secures a given setting when using the tool as a reference gage. Finish is satin chrome. Each gage is packaged in a wood case.

▼ BREVITY—Identify by IEN - 11657 if you write the maker ▼

INSULATING . . Aluminum shields are enclosures for electronic elements

Source: INSULINE CORP. OF AMERICA
36-04 35th Ave., Long Island City 1, N. Y.

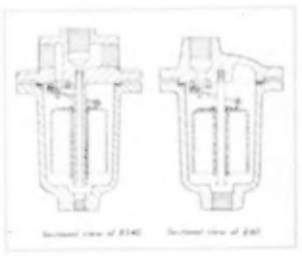


Flexi Mount trademarks a new line of two-piece aluminum shields or enclosures in a range of thirteen sizes. Minimum is 2¾ by 1¾ by 2¼ inches. Maximum is 17 by 5 by 4 inches. Finish can be natural or hammertone. Interlocking flanges are formed for a snug fit. Assembly is by self tapping screws.

▼ BREVITY—Identify by IEN - 11658 if you write the maker ▼

TRAP . . Inverted bucket design for steam at pressures to 500 pounds

Source: V. D. ANDERSON CO.
1931 W. 96th St., Cleveland 2, Ohio



No. 60 for vertical line installation and No. 340 for straight line or elbow connection between horizontal and vertical are two new traps for steam lines. Housings and covers are forged steel for pressure capacity to 500 lb. and for temperature to 800 deg. F. Internal parts are made of stainless steel except the valve and seat which are Anderloy. A recessed gasket is provided so it will not blow out. Connections can be specified at ¼ or ⅜ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11659 if you write the maker ▼

McDonald

SAFE T HAT and WINTER ACCESSORIES

These special cold-weather accessories make the famous "T" hat comfortable in the coldest climate. Full protection of the tough aluminum alloy shell, ribbed for extra strength . . . plus the shock-absorbing, fully suspended head band. Light in weight — 2 shell sizes provide quick and easy adjustment to fit all heads.

WINTER HEADBAND
Fleece-lined for cold weather comfort.

ZERO HOOD
(Shown in top illustration)
Provides ear protection

Heavy weight Zero Hood (Shown at left) for extreme cold with full ear and neck covering

Both Zero Hoods available in medium and large sizes

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5110 S. HOOVER ST., LOS ANGELES 37, CALIF.
Other Offices in San Francisco & Houston

▼ BREVITY—Identify by IEN - 11660 if you write the maker ▼

▼ BREVITY—Identify by IEN - 11661 if you write the maker ▼

With rare exceptions on commerical and industrial installations

Ordinary Fuses and Breakers Do Not Protect Except Against Short-Circuits But - - -

Fusetron DUAL ELEMENT Fuses

Provide 10 Point Protection

Count 'em

1 Protect against short-circuits.
2 Protect against needless blows caused by harmless overloads.
3 Protect against needless blows caused by excessive heating — lower resistance results in cooler operation.
4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
5 Protect motors against burnout from overloading.
6 Protect motors against burnout due to single phasing.
7 Give DOUBLE burnout protection to large motors — without extra cost.
8 Make protection of small motors simple and inexpensive.
9 Protect against waste of space and money — permit use of proper size switches and panels.
10 Protect coils, transformers and solenoids against burnout.

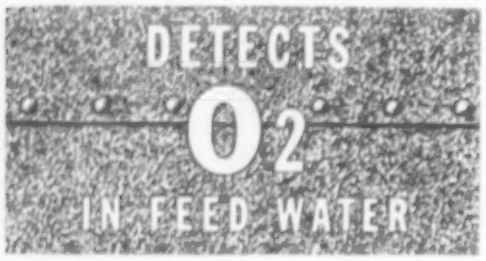
• Patented Time-lag fuse construction adopted as standard practice at Testing Laboratories in New York City.

DON'T RISK LOSSES. One needless shutdown — One lost motor . . . One destroyed switch or panel — One burned out solenoid . . . may cost you far more than replacing every ordinary fuse with a FUSETRON dual-element fuse.

BUSSMANN MFG. CO.
Division of McGraw Electric Co.
University at Jefferson St. Louis 7, Mo.

Fusetron DUAL ELEMENT Fuses

▼ *BREFITT—Identify by* IEN - 11663 *if you write the maker* ▼



Continuous records of the oxygen dissolved in boiler feed water and of the hydrogen entrained in steam, point to the corrective measures necessary to prevent otherwise unsuspected and costly corrosion. The Cambridge Analyzers measure and record dissolved oxygen directly. The hydrogen in the steam is the measure of the oxygen set free by dissociation. Cambridge Instruments are available for recording O_2 and H_2, either separately or simultaneously. *Send for Bulletin 148 BP.*

In addition to instruments used in power plant operation, *Cambridge* also makes pH Meters and Recorders, Gallonometers, Gas Analyzers, Flowmeters, Exhaust Gas Testers, Surface Pyrometers and other instruments used in Science, Industry and Medicine. *Write for literature, stating application.*

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal, New York 17, N. Y.
Pioneer Manufacturers of
PRECISION INSTRUMENTS

▼ *BREFITT—Identify by* IEN - 11664 *if you write the maker* ▼

Two sets of spiral bevel gears as shown in Fairfield engineered and manufactured for a leading aircraft engine manufacturer.

The lightweight gears, which are one of an assembly in aircraft Twin Wasp Engines, incorporate Timken Bearings and one of the most type of engagement that have benefited from Fairfield's experience with aircraft-quality high precision and uniform high speed. It made economy and required specification of industry. It goes with a part of the product you have yet mounted with Fairfield. Write today.

FAIRFIELD MANUFACTURING CO.
215 SO. EARL AVENUE • LAFAYETTE, INDIANA

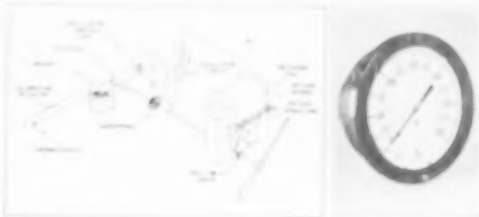
▼ *BREFITT—Identify by* IEN - 11665 *if you write the maker* ▼

407 DOUGLAS AVENUE • KALAMAZOO 56, MICHIGAN

▼ *BREFITT—Identify by* IEN - 11666 *if you write the maker* ▼

PYROMETER . . Temperature indicator and recorder based on Microsen control

Source: MANNING MAXWELL & MOORE INC.
1948 Kossuth St., Bridgeport 2, Conn.



New application of the Microsen control, previously described IEN-958-48, provides a means to operate the pointer of an indicator or the pen on a temperature-recording instrument. Overall temperature range for which the equipment is available is between minus 300 and plus 3,000 deg. F. Actuation is by a thermocouple, indicating or recording is by a rotary solenoid. The Microsen action produces mechanical equilibrium between one force proportional to the thermocouple input and the other proportional to the position of the instrument pointer or pen arm.

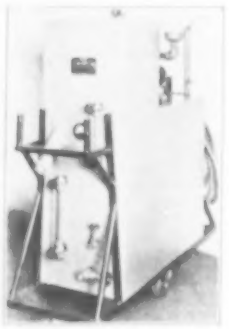
Change in temperature across the thermocouple input, results in deflection of the Microsen beam to change position of the flag end of the beam with reference to the oscillator coil in the control mechanism. This derives the oscillator circuit with accompanying current change through the solenoid coil. Resulting movement of the pointer and armature rebalances the circuit against action of the coil spring connected to the armature. Accuracy is within ½ per cent.

Bulletin 404, 12 pages, presents illustrated data on construction and operation, lists design features, provides dimension drawings for indicator and recorder, tabulates ranges and thermocouple materials, gives list prices, includes information on other typical Microsen applications.

▼ *BREFITT—Identify by* IEN - 11667 *if you write the maker* ▼

CLEANING . . Steam spray machine employs electrically heated boiler

Source: LIVINGSTONE ENGINEERING CO.
102 Grove St., Worcester 5, Mass.

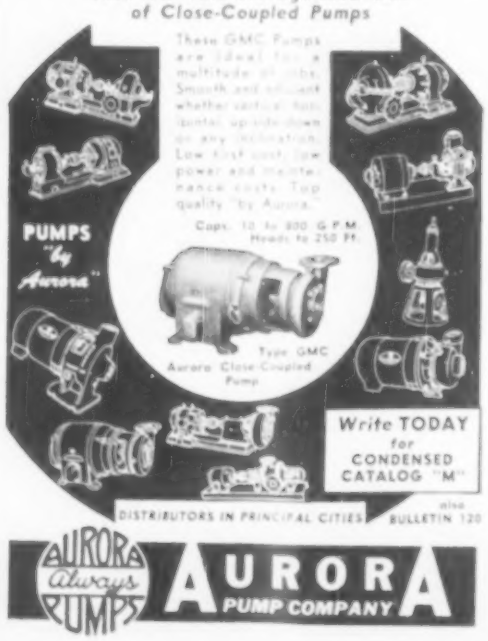


Type JC30 LCS is a new assembly in the company's Speedybotic Steam-Jet cleaning equipment, previously described IEN-1249-48. The new machine mounts one of the company's electrically-heated boilers with a pressure tank, motor-driven pump, controls, hose lines and a valve-equipped lance. Overall width is 20 in. for movement in narrow aisles. The equipment is suited particularly for periodic cleaning of textile looms.

Dry steam is delivered to the lance at high pressure, about with a concentrated solution of solvent or detergent if the steam alone is not sufficient to remove encrusted dirt and grease. Operation of the lance is automatic. One man can clean a textile loom in about 45 minutes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ *BREFITT—Identify by* IEN - 11668 *if you write the maker* ▼



▼ *BREFITT—Identify by* IEN - 11669 *if you write the maker* ▼

▼ *BREFITT—Identify by* IEN - 11670 *if you write the maker* ▼

TRANSMISSION MACHINERY

A complete line of Chains and Sprockets for every Conveying, Elevating and Driving need.

▼ BREVITY—Identify by IEN - 11672 if you write the maker ▼

22 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION

▼ BREVITY—Identify by IEN - 11673 if you write the maker ▼

The revolutionary **AUTOMATIC FEED** *you've been waiting for!*

Feedmaster
AUTOMATIC AIR FEED

FITS ANY PRESS—Front or side mount, or attaches to die. 2-hole installation.
ACCURATE—Positive drive. No slippage.
SIMPLE SET-UPS—Change in a few minutes! No special tools, no wasted time! Changes are so easy and quick you can run feed short runs as well as long runs automatically . . . increase profit on jobs and available press time!
VERSATILE—Handles any stock, any thickness. Parts, strips, rounds, squares. Feeds singly or two or more at a time!
ECONOMICAL—Costs ½ to ⅓ as much as other feeds of similar capacity or range!

FEEDMASTER will give your production planning problems a lift. Nothing else is so versatile, so economical and so easy to use. Ask your nearest stamping supply house for details, or write us for prices, or send us your production problem for a free analysis. Write today!

Feedmaster gives you a full day's production every hour!

Address inquiries to GREAT WESTERN TOOLS, INC. 3877 Riverside Drive, Burbank, California

▼ BREVITY—Identify by IEN - 11674 if you write the maker ▼

A—Deep crack. B—Tapering Smooth-On. or C—Crack completely sealed.

If You've Never Used SMOOTH-ON, *read this:*

STOPS LEAKS SMOOTH-ON No. 1 CEMENTS IRON

Smooth-On No. 1 Iron Cement is a metallic powder which you mix with water to the consistency of putty. You tamp it, while still soft, into a crack or hole, making sure to force it against all surfaces. With Smooth-On you don't need to use heat or special gadgets. As it hardens, it expands slightly, clinging tightly in place. The repaired part is ready for use as soon as Smooth-On sets hard. Keep Smooth-On handy for both emergency and routine maintenance repairs. But it in 7 oz., 1, 5, 20, or 100 lb. size. If your supply house hasn't Smooth-On No. 1, write us.

FREE 40-PAGE REPAIR HANDBOOK

Shows many industrial and home repairs made with No. 1 and other Smooth-On Cements. Leaks stopped, cracks sealed, loose parts made tight. 170 illustrations. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. I
570 Communipaw Ave., Jersey City 4, N. J.

Do it with SMOOTH-ON
THE IRON CEMENT OF 1000 USES

▼ BREVITY—Identify by IEN - 11675 if you write the maker ▼

CLEANING . . Portable vacuum machine for wet or dry operation rates 195 cfm.

Source: KENT CO.
279 Canal St., Rome, N. Y.

Triple Power (see photo) new portable vacuum machine for industrial use—picking up wet or dry dirt from the floor. The machine handles 195 cfm of air at its suction hose. It has capacity for 1½ bushels of dry dirt, 10 gal. of dirty water. Mounting with a caster and two wheels arranged so the operator can pull the assembly along as he applies the suction tool. An assortment of attachments are available for industrial cleaning purposes. The machine is characterized by its essentially noiseless operation.

▼ BREVITY—Identify by IEN - 11676 if you write the maker ▼

PROCESSING . . Castings, valves, pumps, vessels for corrosive services

Source: GENERAL CERAMICS & STEATITE CORP.
44 Crows Mill Road, Keasbey, N. J.

Problem inquiries are invited

Kemplas trade names new modified phenolic resin developed by Pennsylvania Salt Manufacturing Company from which the company is prepared to make various items of corrosion resistant process equipment to specification. Representative items are castings, pipe fittings, vessels to 30 in. in diameter, pumps, valves.

The material is resistant to attack by most acids except those that are highly oxidizing and to certain definite concentrations of alkalis within given temperature limits. It is stable to 375 deg. F. but is not recommended for service in excess of 350 deg. F. It is not harmed by thermal shock over a considerable range. Manufacture is by cold casting or lamination with glass cloth followed by molding to shape.

▼ BREVITY—Identify by IEN - 11677 if you write the maker ▼

STRAPPING . . Coiled band dispenser holds and positions coils and cuts off

Source: ACME STEEL CO.
2838-42 Archer Ave., Chicago 8, Ill.

Any two coils of ⅝, 1¼ or 2 in. strapping bands in any thickness are positioned by adjustable side guides in this new Fort Load strapping band dispenser. The strapping issues through the base under a shear blade operated by a lever on the side of the housing. Separators for ⅝-in. coils can be specified if desired.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11678 if you write the maker ▼

Ledeen CYLINDERS IMPROVE THE JOB

CYLINDERS USED AS FLUID PUMP FOR HIGH PRESSURE INJECTION

Paint spray booths are cleaned by an air-water pump consisting of two Ledeen Heavy Duty cylinders operated by compressed air and injecting a hot water-detergent solution into the steam line.

There are Ledeen *medium duty, heavy duty* and *super duty* cylinders for air, oil or water operation ready to help you, wherever you have to . . . push or pull • lift or lower • press or squeeze • tilt or turn • open or close.

Standard Ledeen cylinders and mounting attachments are available from distributors' stock in major cities. Special cylinders on order.

WRITE FOR NEW BULLETIN 500.

LEDEEN CYLINDERS ARE GOOD CYLINDERS

Ledeen MANUFACTURING CO.
1602 SAN PEDRO STREET • LOS ANGELES 15, CALIF.

▼ BREVITY—Identify by IEN - 11679 if you write the maker ▼

STACKBIN sections will give you a stockroom wherever you want it—quickly and easily as building a sectional book case. These patented sectional storage bins nest together without the use of tools—cost you nothing to build, nothing to move. Find out today how STACKBINS can lower YOUR handling costs.

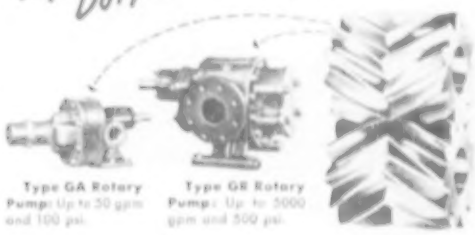
IMMEDIATE SHIPMENT
Manufactured and sold in Canada exclusively by Wickwire-Stockbin Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

▼ BREVITY—Identify by IEN - 11680 if you write the maker ▼

Light Duty or Heavy Duty



Type GA Rotary Pump: Up to 50 gpm and 100 psi.

Type GR Rotary Pump: Up to 5000 gpm and 500 psi.

Double Helical Herringbone Gear Rotors: Quiet and efficient; extra large wearing surfaces; no axial thrust; no trapping of liquid.

. . . The Same Sturdy Construction!

Both the light duty Type GA and the heavy duty Type GR incorporate the rugged herringbone rotors that operate so quietly and efficiently . . . combining with the whole advanced Worthington design for smoothest performance and longest, most economical rotary pump service. For further facts proving *there's more work in Worthington*, write to *Worthington Pump and Machinery Corporation, Reciprocating Pump Division, Harrison, New Jersey.*

WORTHINGTON

▼ BREVITY—Identify by IEN - 11681 if you write the maker ▼

***Heavy Duty* YARD CRANES**

by WAYNE CRANE

Pay off fast!

Converts easily to clamshell, dragline, magnet, shovel, trench hoe or pile driver.

Fast, one-man operation — works easily in tight spots.

Wayne Crane users are our "best salesmen." Sales and service in all industrial cities. Wire or write for specifications and prices. You'll like both.

WAYNE CRANE DIVISION, AMERICAN STEEL DREDGE CO. INC.
FORT WAYNE 1, INDIANA
Manufacturers of Material Handling Equipment Since 1905

▼ BREFITT—Identify by IEN - 11682 if you write the maker ▼

Sleeve Bearings *Made to Order*

JOHNSON BRONZE engineers will help you decide which type bearing is best suited to your application and will design it. Material properties, lubricants, hydrodynamics, load, speed, temperatures and other considerations will be carefully studied. Satisfactory bearing performance in many installations is the result of such study of operating conditions and expert engineering. Consultation with these specialists has proved invaluable to other manufacturers.

WRITE for an appointment—no obligation

BRONZE and RABBITT

STEEL and RABBITT

CAST BRONZE *Plain or graphited* — LEDALOY *Self-lubricating* — THIN WALL BEARINGS *Plain or graphited*

Johnson Bronze
SLEEVE BEARING HEADQUARTERS
476 SOUTH MILL STREET • NEW CASTLE, PA

▼ BREFITT—Identify by IEN - 11683 if you write the maker ▼

PLENTY OF ELBOW ROOM!

You'll see at a glance that the "understung" design of this new Marachke machine provides more elbow room for buffing and polishing operations than was ever before possible. No interferences under the spindle between the wheels and side walls of the base. Ideal where greater freedom of action in work with bulky pieces is needed. Unusual spindle rigidity. Maximum dependability of accurate bearing alignment. Many unique features.

Also made with two spindles and two motors in various sizes ranging from 1 HP to 40 HP.

This new buffing spindle—or one of the dozens of other Marachke grinding and polishing machines—may be the answer to your production problem. Tell us about it, we'll try to help.

VONNEGUT MOULDER CORPORATION
1827 MADISON AVENUE • INDIANAPOLIS 25, INDIANA

▼ BREFITT—Identify by IEN - 11684 if you write the maker ▼

It pays to get the whole picture when selecting Unit Heaters

Focus on Styling, Construction, Performance

You'll be shooting for savings when you select Modine. Yes, when you get the whole picture, you'll find specially suited Modine Unit Heaters. Ultimately, stores, greenhouses, commercial brooder houses, factories, etc. require equipment to efficiently, economically and dependably do the heating job. Modine Unit Heaters are the logical source of your heating needs. Ask your Jobber. Modine Mfg. Co., 1760 Dekoven Ave., Racine, Wis.

Ask for Modine Unit Heater Bulletin U-1083. Also available on bulletins covering special applications in commercial brooder houses, greenhouses, and milk houses.

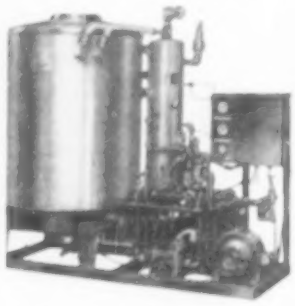
U-1083

Modine UNIT HEATERS
FOR FACTORIES • STORES • GREENHOUSES • COMMERCIAL BROODER HOUSES • MANY OTHER APPLICATIONS

▼ BREFITT—Identify by IEN - 11685 if you write the maker ▼

BOILER . . Self-contained design, 10 to 100 hp., gas, oil or combination

Source: CLAYTON MFG. CO.
P. O. Box 550-A, El Monte, Calif.



New design in the company's line of self-contained continuous-coil boiler includes a new electronic control to provide electric ignition, to open the gas or oil valve to the burner and to stop the ignition spark after the burner has been started. It returns to ignition position in the event of any failure in operating sequence.

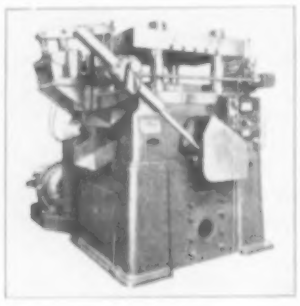
An air interlock also in the new assembly prevents fuel flow to the burner during an off-cycle or in event of failure in blower, current or motor. Each assembly is a self-contained unit ready for connection to fuel, water and electric supply. The smallest requires 3 by 5 ft. of floor space. The largest takes 4 by 7 feet.

Construction is in accordance with ASME Boiler Code. Maximum operating pressure is 150 pounds. Oil consumption is 3.2 to 30 gph, over the range of sizes. Gas consumption is 400 to 4,000 cfm. Shipping weight is 1,310 to 4,520 pounds.

▼ BREFITT—Identify by IEN - 11686 if you write the maker ▼

PRESS . . High speed, motor driven, has roll feed, 30 to 2,500 ton ratings

Source: BRANDES PRESS CO.
6406-10 Euclid Ave., Cleveland 13, Ohio



Self-contained assembly in pull-down design for operation of the moving platen, air-counterbalanced reciprocating parts, long guides in the base and on the draw rods, panel-mounted pushbutton control for start, stop, inch, forward and reverse all characterize this new line of high-speed production presses. Each is equipped with roll feed and scrap cutter.

Rating is 175 ton for the assembly shown in the illustration. It operates at speeds to 250 strokes per minute, depending on stroke length which is to 10 inches. The press provides die clearance measuring 28 in. front to back, 60 in. right to left. The feed rolls are adjustable through 3 in. in vertical direction, and any amount to 12 in. in feed action. They take strip stock to 18 in. in width. The scrap cutter adjusts 1 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Note the procedure accompanying the index, page 102

▼ BREFITT—Identify by IEN - 11687 if you write the maker ▼

Asarcon 773 BEARING BRONZE ...IN ANY LENGTH YOU NEED

- Any length required, up to 105". Longer or shorter than 13" . . . to suit your requirements.
- Always meets SAE 660 Specifications.
- Minimum of wasted short ends.
- No sand or dross to dull tools.
- No soft or hard spots.
- No blowholes or porosity.
- Better fitting characteristics.
- Greater impact strength, tensile strength, yield strength and hardness.
- National distribution.

Order ASARCON-773 bar bronze in any length you need . . . up to 105".

AMERICAN SMELTING AND REFINING COMPANY
Perth Amboy Plant, Barber, New Jersey

▼ BREFITT—Identify by IEN - 11688 if you write the maker ▼

Garlock GASKET PUNCHES

For Cutting Gaskets and Washers from All Types of Soft Gasketing Materials

Each set of Garlock Gasket Punches consists of 14 hardened and steel punches, in sizes from 3/16" to 1" diameter, advancing in 1/16" steps; 1 hardened cutting block; 1 Garlock No. 800 cutting block with 12" x 12" x 1/2" cork and rubber cutting surface, with a hardened steel and a bottom pad to protect the cutting edges of the punches. All hand quality. Easy to use. Also ask about the Garlock Gasket Cutter for cutting gaskets in sizes up from 1 1/2" to 12 1/2" diameter. Write for folders.

THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.

GARLOCK

▼ BREFITT—Identify by IEN - 11689 if you write the maker ▼

SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 - INDIANA

▼ BREFITT—Identify by IEN - 11690 if you write the maker ▼

Full speed ahead, America . . . and Viking is all set to go. Distributors are strategically located in every important industrial center of the nation—Sales and Service Offices blanket the country.

With the most complete line of rotary pumps in the world, Viking is prepared to serve you with the right unique for your operating problem.

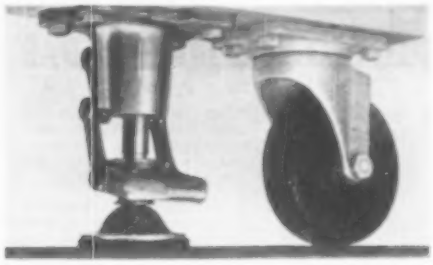
Get a copy of free Bulletin B-107. Rotary pumps from 2.5 to 1000 gpm; and the name of your nearest distributor—write today. No obligation.

VIKING — AN HONORED NAME IN PUMPING

SALES and ENGINEERING SERVICE
S STOCK
MAJOR JOBBING Representatives

VIKING PUMP CO. Cedar Falls, Iowa — See Our CATALOG IN SWEETS

▼ BREVITY—identify by IEN - 11691 if you write the maker ▼



Roll equipment or hold it with Bassick Position Locks

You can do *both* . . . roll equipment quick and easy (on Bassick Casters), hold it fast and firm (with a Bassick Position Lock).

Try this time-and-cost-saving pair on machines, assembly dollies, portable conveyors, tool tables, lifts, work-stands, etc; . . . and give greater safety and efficiency to *all* your movable equipment.

Bassick Position Locks, with a 12 sq. in. friction locking surface, grip when the foot lever is stepped on . . . release at the touch of a toe. Wide range of sizes. For information on position locks, casters or wheels, write to the world's largest manufacturer of casters . . . THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. *In Canada:* Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.

Bassick MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

▼ BREVITY—identify by IEN - 11692 if you write the maker ▼

Better Protection For Your Workers . . . Higher Production for You!

U. S. DIPPED NEOPRENE CANVAS UTILITY GLOVES

Protect hands against cuts, splinters, abrasion, oils, mild acid solutions and disinfectants. Fingers curved for flexibility. For extra comfort, soft flanned linings. Knit wrists or gauntlets. For any kind of work, indoors or out; for any industry; for any job where practical hand protection is needed.

U. S. DIPPED NEOPRENE INDUSTRIAL GLOVES

Rough-surface fingers assure positive, easy gripping. Neoprene resists gasoline, oils, greases and corrosive chemicals. Construction conforms to natural curves of hand—eliminates straining and pulling. Highly flexible, permitting easy, natural working motions. Full range of sizes, lengths and weights.

Available from your United States Rubber Company Branch

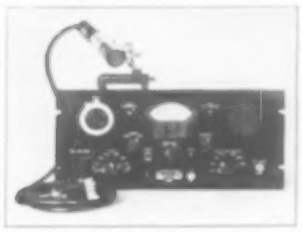
U. S. INDUSTRIAL GLOVES

UNITED STATES RUBBER COMPANY

▼ BREVITY—identify by IEN - 11694 if you write the maker ▼

TESTING . . Geiger-Muller equipment to make radio activity measurements

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.



New probe design and new adjustment for response over a range of equilibrium times between 1 sec and 5 min characterize the company's recently improved Type 1500-B Counting Rate Meter, previously described IEN-11175-47. Sensitivity has been increased also so a 40 to 50 ft. cable can be employed between probe and meter without introducing serious loss. Terminals are included to connect a recorder such as a 5-ma. Esterline Angus Model AW.

The Geiger tube is held in the probe with a quenching preamplifier and the assembly is designed to be held in one hand, mounted on a tripod or clamped in an accessory bench mount. Application can be made with commercially available sample changers, lead shields, accessories.

Low response speed, involving few probable error, can be used for routine disintegration rate measurements. High speed provides for maximum response to a change in counting rate that occurs in a fraction of a second.

Range is in five steps with full-scale values maximum at 200 to 20,000 counts per minute. Minimum rate that can be read on the meter scale is 5 counts per minute. Operation is on 110 volt 50/60-cycle ac, or can be changed to 220 volts. Dimensions are about 10 by 13 by 9 inches. List price without the counter tube is $405.

▼ BREVITY—identify by IEN - 11695 if you write the maker ▼

PACKAGING . . Gravity feed machine fills bags by weight and closes them

Source: BEMIS BRO. BAG CO.
406-10 Pine St., St. Louis 2, Mo.

Gravity Packer is a new assembly of hopper to hold free-flowing granular materials, a net weighing scale, an oscillating mechanism to settle the delivered contents in a bag secured to a holder, a conveyor equipped base and a dual sewing head for multi-wall open mouth or textile bags. The weighing range is 50 to 140 pounds. One man and the machine can fill and close five to seven bags per minute. Two men can increase the rate to twelve bags. Weight tolerance is within 2 ounces.

An empty bag is positioned on the fill holder and materials flow is released by the operator. Flow stops when the predetermined amount has been delivered. The operator releases the bag to the conveyor where V belts support it in upright position for movement to the left under the sewing head. This head indexes for one type of bag or the other and is served by the man at the filling station or by his helper.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—identify by IEN - 11696 if you write the maker ▼

30 TONS CAN BE WEIGHED IN SUSPENSION BY YALE LOAD KING CRANE SCALE

- Saves time, effort and money by eliminating a handling operation.
- Net weight of load is always indicated on the easy-to-read dial chart.
- Lower swivel hook is "safety-first" non-fracturing type—opens slowly when scale is overloaded.
- "U-bolt" safety stop prevents damage to lever system in case of overload.
- Exclusive MAGNEFORCE mechanism assures long life of sustained accuracy.

Write for literature

YALE THE YALE & TOWNE MANUFACTURING CO.
Roosevelt Boulevard • Philadelphia 15, Pa.
HAND LIFT AND POWER TRUCKS • HAND AND ELECTRIC HOISTS • INDUSTRIAL DIAL SCALES

▼ BREVITY—identify by IEN - 11697 if you write the maker ▼

HANNIFIN

75 STANDARD MODELS

Hydraulic Presses

Engineered To Meet Your Requirements

IT'S EASY to get hydraulic presses engineered to meet your particular requirements when you choose from the Hannifin line. 75 standard models, plus many special designs, in capacities ranging from 5 to as high as 500 tons are available for handling standard and special production jobs: straightening—press fit assembly—forming—molding—broaching and similar operations. Hannifin design readily permits modifications or variations from standard at moderate cost. Table size, gap, reach, control equipment, and ram speed can be altered easily to suit special conditions. Take advantage of Hannifin engineering service—ask for recommendations.

Right—Model T 250 Ton Six Post Capacity 25 Ton.

SEND FOR THIS CATALOG

BULLETIN 130, "Hannifin Standardized Hydraulic Presses," contains detailed information on Series T Custom Presses, Series S Straightening Presses, and Series C Column Type Presses — Helpful specifications and engineering data. ASK FOR YOUR COPY

HANNIFIN CORPORATION 107 S. Kilbourn Ave., Chicago 24

▼ BREVITY—identify by IEN - 11698 if you write the maker ▼

The Pines principle of bending, piercing, tubing, threaded or coiled springs, and wound springs, combines tested and proven methods that assure low costs and peak production. Roll, compression, draw, and notch bending methods are skillfully adapted to best fit your material and product needs. Hydraulic power, pneumatic and mechanical equipment is combined to assure high efficiency and lower production costs. Ask Pines to analyze your bending problems now. Phone Aurora 2-7600.

COST CUTTING FEATURES OF PINES BENDERS

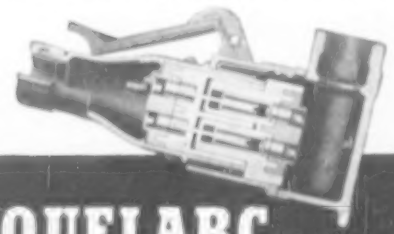
- Perfect Accurate Uniform Bends without marking or denting.
- Push Button Control is simple, easy for one man to operate.
- Highly Versatile—handles wide variety of work—sequence, coil, compared to multiple heads.
- Fast Set-Ups—tool changes in 10 minutes.
- Interior Design—top-and alloy steel spindle, adjustable gibs, Timken bearings, Vickers pump.

WRITE FOR FREE LITERATURE

Find out how the Pines Benders are adapted to save time and cut costs. Literature describes and pictures accessories, tooling, operations and methods on actual jobs.

PINES ENGINEERING CO. INC.
Specialists in The Bending Equipment
411 WALNUT AURORA, ILLINOIS

▼ BREVITY—identify by IEN - 11699 if you write the maker ▼



QUELARC The Circuit-Breaking Plugs and Receptacles . . . Ratings up to 200 AMPERES

The exclusive QuelArc construction provides exceptional protection to contacts, for safe use as current rupturing devices. Unique partitioned insulation provides extra long distance between contacts and between contacts and ground. Insulating chambers completely enclose all contacts and form an air-trapping space. Lubricated cast metal housings, bakelite insulation and individually removable contacts insure long service life.

QuelArc plugs and receptacles are available in a complete range of sizes, 2, 3 and 4 pole types—grounded through shell or extra pole. Housings with threaded cap, plain cap or hinged spring door. Ratings 20, 30, 50, 100 and 200 amperes, 250 volts DC, 600 volts AC. Consult your Pyle Catalog 1100, Bul. 1140-2 for complete listings.

CONDUIT FITTINGS • FLOODLIGHTS

THE PYLE-NATIONAL COMPANY
1348 North Kostner Avenue • Chicago 51, Illinois

▼ *BREFITT—Identify by* IEN - 11700 *if you write the maker* ▼

Nicholson Makes

FREEZE-PROOF

Steam Traps

for Every Plant Use

Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 4 times average drainage capacity results in minimum heat-up time. The non-air-binding feature of Nicholson traps also notably facilitates steam transfer in severe weather. Size ¼" to 2", press. to 225 lbs. BULLETIN 450.

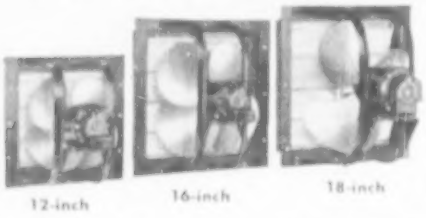
W. H. NICHOLSON & CO. 159 Oregon St. Wilkes-Barre, Pa.

Valves • Traps • Steam Specialties

▼ *BREFITT—Identify by* IEN - 11701 *if you write the maker* ▼

SAVE

with these NEW EMERSON-ELECTRIC EXHAUST FANS



Here's a brand new line by America's foremost fan maker . . . built for easy installation and rugged service at rock-bottom cost! Equipped with special fan duty motors and built in automatic shutters. Large air delivery, quiet operation, fully guaranteed. Write for Bulletin No. 568.

The EMERSON ELECTRIC MFG. CO., St. Louis 21, Mo.

EMERSON ELECTRIC
MOTORS • FANS APPLIANCES

▼ *BREFITT—Identify by* IEN - 11702 *if you write the maker* ▼

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

HANDY BOOK OF ANSWERS for every man responsible for tools and dies. Makes you look to machine tool designers, tool room foremen, every man who must know how to make a tool that will work, company's other specialists. Gives complete, workable information on the right steel for "hard" machining, shaping, forming, drawing, cutting, blanking, trimming, etc. Tells how to heat treat, temper, harden, anneal, carburize, nitrided, flame hardened, carbon complete, workable information on the right steel for "hard" machining, shaping, forming, drawing, cutting, blanking, trimming, etc. Tells how to heat treat, temper, harden, anneal, carburize, nitrided, flame hardened, carbon [illegible] for each action. 192 pages, 6x9 in. Price $2.00 postpaid. Order today, read tomorrow, use tomorrow. Tool and Die Steel Handbook will be your constant guide and reference for years to come. Tool and Die Steel Handbook will be your constant guide and reference for years to come. Tool and Die Steel Handbook will be your constant guide and reference for years to come

▼ BRIEFITS—Identify by IEN-11710 if you write the maker ▼

Why
ALCO-LITE Type 400
is the right ladder for you

The Design is Right

Actually standing room on the 24" by 17" platform. Compact folding design makes room in trucks and vans. Available in four heights from 4' to 12'.

The Strength is Right

Constructed from strong, 6061 Aluminum. Alloy heavily ground throughout. Supports heavy loads for years without deteriorating.

The Weight is Right

Weighs less than 9 lb. (only 112 lb. folded weight 50 lbs.) Quickly and easily moved about without worker strain.

The ALCO-LITE Type 400 is the right folding platform ladder for you—because it combines convenience and durability.

Write for complete information on ALCO-LITE aluminum industrial ladders.

Pioneer Builders of Aluminum Industrial Ladders

ALCO-LITE ALUMINUM LADDERS

ALUMINUM LADDER COMPANY

100 CARBIS STREET • WORTHINGTON, PENNA.

▼ BRIEFITS—Identify by IEN-11711 if you write the maker ▼

Another Problem
SOLVED—

ELIMINATING ALIGNMENT HEADACHES WITH

Bendix
Eclipse Flexible Metal Hose

Use of rigid piping was originally attempted in making multiple fuel line connections to this steam generator. Alignment was such a problem, however, that this type of installation was given up. Bendix Flexible Nipples were then tried and solved the problem immediately. On any installation where alignment is difficult—where expansion joints or unusual pipe bends are required—solve your problems the easy way with Bendix Flexible Metal Hose.* Write today and let our engineers work on your problem with you.

**Engineered to your requirements in 85-15 bronze, SAE 1010 carbon steel, stainless steel, Monel, beryllium copper, cupro nickel and other special alloys.*

LOOK FOR THE MARK OF QUALITY

ECLIPSE-PIONEER DIVISION
BENDIX AVIATION CORPORATION
TETERBORO, NEW JERSEY
Canadian Representative: The Holden Co., Ltd., 474 St. James Street, West Montreal 3, Canada

Export Sales: Bendix International Division, 72 Fifth Ave., New York 11, N. Y.

▼ BRIEFITS—Identify by IEN-11713 if you write the maker ▼

PRESS TOOLS . . Strip stock feeder is operated by cam on punch holder

Source: H. E. DICKERMAN MFG. CO.
319-23 Albany St., Springfield 4, Mass.

New size has been added to the company's strip-stock feeders to handle metal gages ranging from .040 to .080 inch. It is cam operated as in previous designs by the company, forwards the stock through multi-station dies or simple blanking and piercing dies without buckling. Feed length is adjustable as determined by cams that are made for given jobs. A fine feed adjustment can be made while the unit is in operation. Overall dimensions are 12⅛ by 3¼ by 2⅛ inches.

▼ BRIEFITS—Identify by IEN-11714 if you write the maker ▼

TEXTILES . . Fabric treating material to minimize wrinkling and shrinking

Source: E. I. duPONT deNEMOURS & CO.
2518 Nemours Bldg., Wilmington 98, Del.

Tag identifies treated fabric

Zeset is a new resin-base material for use by textile finishers equipped with regular padding, drying, heat treating and washing equipment. The material is particularly designed for spun viscose rayon fabrics and certain cotton fabrics, linen and pile fabrics. It is stable in storage and can be held in treating baths for days at room temperature. Application makes the fabric resistant to wrinkling and shrinking. It also imparts a soft wool-like finish.

▼ BRIEFITS—Identify by IEN-11715 if you write the maker ▼

MACHINE PARTS . . Worms and spirals for machine applications as specified

Source: JAMES EAGEN & SONS
198-202 W. 8th St., Wyoming, Pa.

The company announces availability to specifications of worms and spirals made of mild steel, stainless or alloy steel, or of aluminum or brass of Monel Metal for use as components in machine construction. It is prepared to supply the unit parts featuring initial development in connection with screw conveyors, feed screws to advance coal into stokers. Typical applications include use in earth-drilling or boring machines, extruding machines, mixing equipment, conveying of powdered materials.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BRIEFITS—Identify by IEN-11716 if you write the maker ▼

YOU MAY SAY—
"No Down Time on Our Machines"

BUT—ARE YOU SURE?

You can't be sure by just walking around the plant and "keeping an eye on them." Too many little unnoticed stops and delays creep in that way. And they can add up to *quite a total!* No, you can be *certain* of full machine hours only by installing *Servis Recorders*. Their charts show you ALL down time, even little 10 minute periods—day shift or night shift. Tells you exactly when each machine stood idle—*and how long.* Write for our folder, *"A Busy Plant."* The Service Recorder Co., 1375 Euclid Ave., Cleveland 15, O.

The Servis Recorder
The "Time Clock" for Machinery

▼ BRIEFITS—Identify by IEN-11717 if you write the maker ▼

The most versatile fork truck of 2000 lb. rating. 130" lift with ample stability. 60" turning radius plus finished automotive steering. foot pedal acceleration. convenient controls and many other design advancements. For complete details request Bulletin 230.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street • Chicago 9, Illinois

▼ BRIEFITS—Identify by IEN-11718 if you write the maker ▼

▼ BRIEFITS—Identify by IEN-11719 if you write the maker ▼

FOR YOUR 7 TO 13 H.P. POWER JOBS

Two-Cylinder
WISCONSIN
Heavy-Duty
Air-Cooled
ENGINES

Models TE and TF (standard engine illustrated) also available as complete Power Units with Clutch Take-Off Assembly or with Clutch Reduction Assembly.

Designed and built to traditional Wisconsin Motor heavy-duty service standards, Models TE-TF Air-Cooled 2-cylinder engines provide ideal power either as component units, as original equipment, or as stationary or portable general purpose power within the 7 to 13 hp. bracket.

The Model TE delivers from 7.3 to 11.2 hp. and the Model TF turns up 8.6 to 13.2 hp. within a 1400 R.P.M. to 2600 R.P.M. speed range. Features include: tapered roller bearings at BOTH ends of the heat-treated, drop-forged crankshaft, high tension rotary-type OUTSIDE Magneto with impulse coupling, oil bath air cleaner, ¾" standard float feed carburetor, positive lubrication by Pump with individual oil stream to each rod . . . plus dependable air-cooling at all temperatures from sub-zero to 140° F.

For "Most H.P. Hours" of all-the-job power service, specify Wisconsin Air-Cooled Engines . . . single cylinder, 2-cylinder and 4-cylinder, in a complete power range from 3 to 30 hp.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

▼ RABBITT—Identify by IEN - 11720 if you write the maker ▼

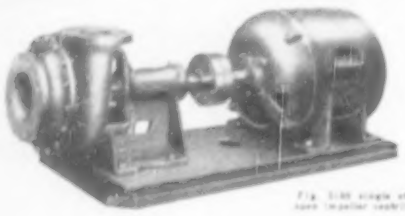


Fig. 5169 single stage, open impeller centrifugal

Announcing . . .

7 MORE SIZES IN THIS NEW CENTRIFUGAL LINE

This new and extremely successful line of centrifugals is now available in 10 sizes. You can now take advantage of the efficiency of this new design to fill your pumping needs in a wide variety of applications.

APPLICATIONS

General water service, irrigation, blower, circulation, transfer, factory water, air conditioning, plumbing, heating, processing and related applications.

CAPACITIES

Fig. 5169 is made in 10 sizes for both motor and belt drives. Capacities to 1000 G.P.M. with heads to 180 ft., depending on capacity.

For more information call or write Pump Headquarters or your nearest Goulds dealer. Ask for Bulletin 710.4.

Goulds PUMPS INC. Seneca Falls New York

▼ RABBITT—Identify by IEN - 11721 if you write the maker ▼

Reported by Users of

STANDARD PNEUMATIC TUBE SYSTEMS

Safe — swift delivery by "AIR" of messages . . . money . . . merchandise!

Savings as high as $10,000 in 9 months' time are reported by users of Standard Pneumatic Tube Systems — filling orders, moving merchandise, money, messages, records, between departments. Reduce messenger and telephone service. Can be installed for a wide range of needs in stores, warehouses, manufacturing plants, offices. Write for Bulletin No. 11, and complete information — address Dept. IEN-120.

STANDARD CONVEYOR CO.
North St. Paul 9, Minn.

Standard GRAVITY & POWER CONVEYORS

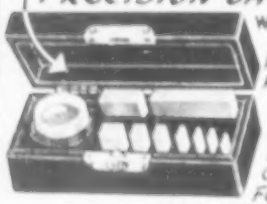
▼ RABBITT—Identify by IEN - 11722 if you write the maker ▼

WHEN ACCURACY COUNTS...

Contact **SCHERR!**

ULTRA-CHEX

PRECISION GAGE BLOCKS



WITH 5 MILLIONTHS ACCURACY • AVAILABLE IN LARGE AND SMALL SETS •

9 BLOCK SET ILLUSTRATED MAKES 330 COMBINATIONS FOR MICROMETER ADJUSTMENT UP TO 4" WITH OPTICAL FLAT ..... $ 25.-

34 BLOCK SET GIVING 80000 COMBINATIONS IN TENTHS UP TO 8" ..... $ 95.50

★ *A Necessity in Every Workshop...*
★ *A Vital Aid to Every Toolmaker...*

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST., NEW YORK 12, N. Y.

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

ADHESIVES . . . Properties on 44 adhesives, 18 sealers, 12 corrosion proofing materials. "Adhesives . . .", 32 pages. Minnesota Mining & Mfg. Co., 902 Prospect St., East St. Paul 8, Minn. IEN-01426

AIR CONDITIONING . . . Cabinet assemblies, 450 to 15,750 cfm; compositions, sizes, ratings. Catalog 7250, 6 pages. Young Radiator Co., 719 Marquette St., Racine, Wis. IEN-01427

BATTERIES . . . "Karbasonic" storage batteries for railroad cars; construction, rating table. Folder GD 1079, 8 pages. Gould National Batteries, 405-06 Calhoun, Trenton 7, N. J. IEN-01428

BRUSHES . . . "Hol-Master" power brushes for cleaning and processing operations; types, descriptions. Folder C-290, 4 pages. Osborn Mfg. Co., 5401 Hamilton Ave., Cleveland 14, Ohio IEN-01429

BURNERS . . . Series F oil burners, band control, capacity tables, installation accessories, dimensions. Catalog 411, 8 pages. Hauck Mfg. Co., 120 Tenth St., Brooklyn 15, N. Y. IEN-01430

CABLE . . . Insulated electric power and control cable, sizes, specifications, shielding, rating tables. Catalog 24, 60 pages. Rome Cable Corp., 105 Ridge St., Rome, N. Y. IEN-01431

CHEMICALS . . . List prices on 2,400 organic chemicals from Allylic Acid to Xylylene Bromide. Bulletin No. 8, 32 pages. Matheson Co., 607 Paterson Plank Rd., East Rutherford, N. J. IEN-01432

CHUCKS . . . Draw-in collets for standard hollow and solidbar machines, listed by machine with prices. Bulletin 50, 4 pages. Harding Brothers, Inc., 1418-20 College Ave., Elmira, N. Y. IEN-01433

CIRCUIT BREAKERS . . . "Aero Magnetic" units for aircraft use; ratings, time-overload curves. Bulletin 3300, 8 pages. Heinemann Electric Co., 100 Plum St., Trenton 2, N. J. IEN-01434

CLAMPS . . . Adjustable units to secure work for machining, welding, engineering drawings; data on four sizes. "Jaw Clamps," 4 pages. J. & S. Tool Co., 473-79 Main St., East Orange, N. J. IEN-01435

CLEANING . . . Abrasive-blast machines for metal cleaning; 11 standard examples. Bulletin 104-A, 8 pages. American Wheelabrator & Equip. Corp., 598 S. Byrell, Milwaukee, Ind. IEN-01436

CLEANING . . . "Hydrosonic Jenny" steam spray machine; illustrated models, application suggestions. "100% Water," 20 pages. Hydrosonic Valve Mfg. Co., P. O. Box 82, Coraopolis, Pa. IEN-01437

CLEANING . . . Portable vacuum cleaners; data on 7 models and line of attachments. Folder H, 8 pages. National Super Service Co., Toledo Executive Bldg., Toledo 2, Ohio IEN-01438

CONDENSERS . . . Large evaporative units for power lines; data on models to 75,000 kva. Bulletin 6-B 7.50, 18 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. IEN-01439

CONDENSING . . . Steam power plant condensers, design accessories, typical units. Bulletin 102, 28 pages. Condenser Service & Eng. Co., Rose & Newark Sts., Hoboken, N. J. IEN-01440

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 56

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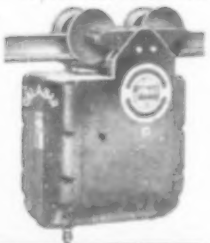

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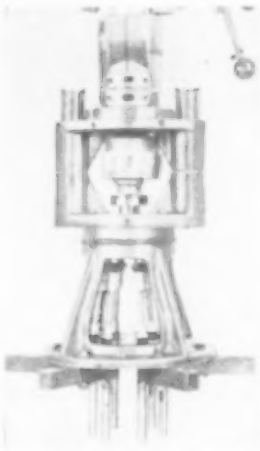

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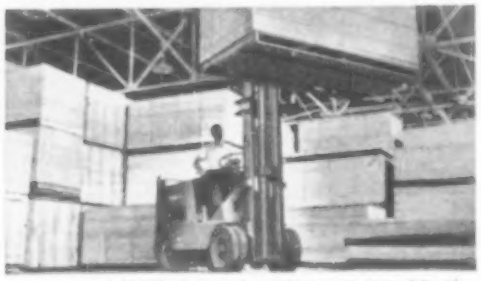

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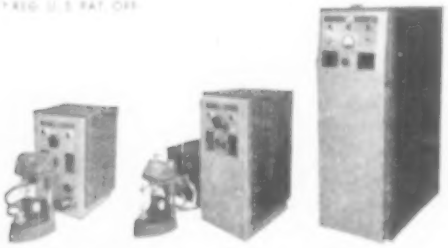

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CONTROLS . . . Indicating temperature control, 150 to 1,200 deg. F.; application data, circuit diagrams. Bulletin 301, 4 pages. Partlow Corp., 4 Complex Road, New Hartford, N. Y. IEN-01446

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CONVEYING . . . Equipment to handle mail, records, supplies in multi-floor building; description. Bulletin 156, 4 pages. Standard Conveyor Co., 84 Indiana Ave., North St. Paul 9, Minn. IEN-01450

COOLING . . . Towers for induced draft, 9.3 to 69.5 tons; detail specifications, ratings. Data Sheet 40 A.B, 4 pages. Arma Industries, Inc., 400-12 Rackerman St., Jackson, Mich. IEN-01451

CORROSION PROOFING . . . Cements for joining ceramic materials; properties listed on a line. Bulletin 2-1, 8 pages. Atlas Mineral Products Co., 442 Walnut St., Mertztown, Pa. IEN-01452

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CYLINDERS . . . "Air-Draulic" power cylinders; operation, models, ratings, application circuits. Catalog 100-5, 7 sheets. Logansport Machine Co., 913 Center Ave., Logansport, Ind. IEN-01456

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DRILLING . . . Machine for work with .001 in. per ft. tolerance; specifications. "Layout Drilling Machine," 4 pages. Bryant Machy. & Eng. Co., 405 W. Madison, Chicago 6, Ill. IEN-01458

DRILLING . . . And other machines for grinding, sawing, wood working; descriptions, accessories. Catalog AD-50, 60 pages. Delta Power Tool Div., 614 E. Vienna, Milwaukee 1, Wis. IEN-01459

DRILLING . . . Machine units to drill, bore, mill, tap; descriptions, specials. Bulletin 110, 8 pages. W. K. Millholland Machinery Co., 6400-4 Westfield Blvd., Indianapolis 20, Ind. IEN-01460

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ELECTRIC DUCT . . . Trolley bonnet for electric distribution, national electric component data layout. Catalog 25, 56 pages. Feed-rite Corp., 125 E. Barclay St., New York 7, N. Y. IEN-01466

ELECTRONIC PRODUCTS . . . Type 12P1 oscillograph tube for general service; performance specifications. "12P1." 8 pages. Radio Corp. of America, 415 S. 5th St., Harrison, N. J. IEN-01467

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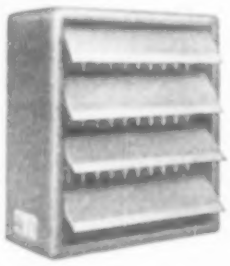

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LOADING . . . Stone loading machines to 20 cu. yd. per min., applications, data, diagrams, specs. Bulletin H 200-200, 8 pages. George Haiss Mfg. Co., Cortlandt & 103d, New York 51, N. Y. **IEN-01416**

LUBRICATING . . . Tests for motors to 300 hp. F. . . . type, test performance, specifications. "Hi Temp Oils," 8 pages. E. F. Houghton & Co., 301 C. W. Lavale, Philadelphia 33, Pa. **IEN-01417**

LUBRICATING . . . "Lubrite Metal" antiseizing compound, description, specifications, uses. Circular L 1107, 8 pages. Lubrite Engineering Co., 4800 Lincoln Bridge St., Lincoln 28, Mo. **IEN-01418**

MACHINERY . . . Circular combination screening, grinding, pulverizing, mixing machinery. Circular CC-1000-1. Folder, 4 pages. Standard Tool & Mfg. Co., 1300 Montgomery, Dayton 7, Ohio. **IEN-01419**

MARKING . . . Electric equipment for the company's self-adhesive marks, examples, specs. Folder, 8 pages. Kimble Adhesive & Label Corp., 1014-20 N. Cahuenga, Hollywood, Calif. **IEN-01420**

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METERS . . Portable electric multi-tester for corrosion and cathodic-protection testing; ranges. "Model R-3," 4 pages. M. C. Miller Co., 1140-44 Emerson Ave., West Englewood, N. J. **IEN-01504**

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MIXING . . Laboratory-size colloid mill, ½ hp.; details, typical products handled. "Charlotte Mill NO-1," 4 pages. Chemfloid Labs. 30 Church St., Rm. 502, New York 7, N. Y. **IEN-01506**

MIXING . . Portable propeller-type units for liquids; selection suggestions and tables. Bulletin 500, 12 pages. Eastern Industries Inc., 294-99 Elm St., New Haven 8, Conn. **IEN-01507**

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MOTOR CONTROL . . Type H starters for 2,300 to 5,000-volt motors; construction, operation. Bulletin 14-H-8410A, 12 pages. Allis-Chalmers Mfg. Co., 900 S. 70th, Milwaukee 14, Wis. **IEN-01512**

MOTOR CONTROL . . Type RA Size 4 starter for 25 to 100-hp. motors; operation. Bulletin G-7005, 8 pages. Arrow-Hart & Hegeman Electric Co., 103-5 Hawthorn, Hartford 6, Conn. **IEN-01513**

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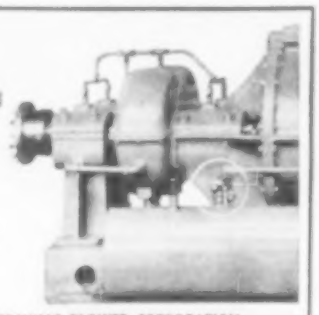

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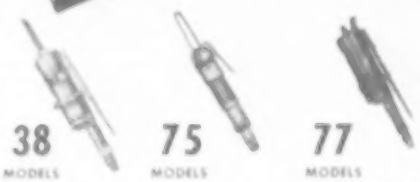

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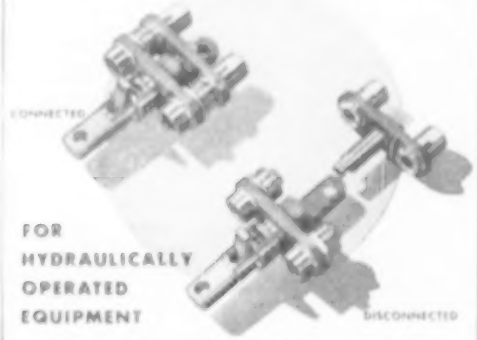

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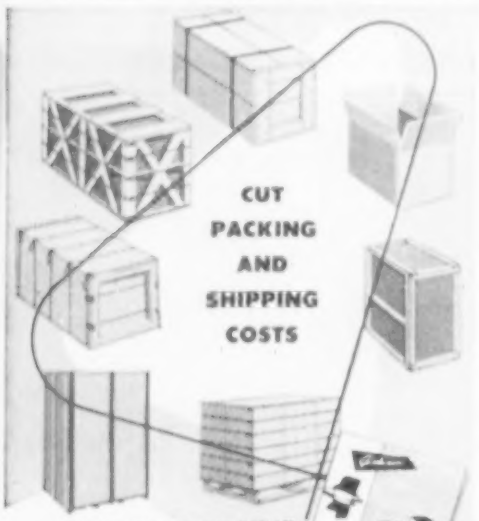

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SHOCK MOUNTING . . "Vibrapad" rubber vibration-isolating kit for machinery, installation. Catalog Section T200. 4 pages. B. F. Goodrich Co., 448 So. S. Main St., Akron 11, Ohio. **IEN-01547**

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STEELS . . Stainless steel for complete equipment: examples, fabrication. "Allegheny Metal in Dollrtable." 36 pages. Allegheny Ludlum Steel, 2019-22 Oliver Bldg., Pittsburgh 22, Pa. **IEN-01549**

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TESTING . . "Vibrotest" portable electric insulation tester; operation, ranges. Bulletin 2-A. 4 pages. Associated Research Inc., 5701 W. Belmont, Chicago 39, Ill. **IEN-01556**

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TESTING . . Service for product testing; illustrated facilities and list of equipment. Bulletin. 24 pages. Telsept Testing Labs., 2747-47 Jackson Ave., Chicago 14, Ill. **IEN-01558**

TESTINGS . . "Fluorotest" portable detector-comparator for ultraviolet fluorescence details. Folder 4 S. 4 pages. Mosle Research Research Laboratory, P. O. Box 222, A, Menlo Park, Calif. **IEN-01559**

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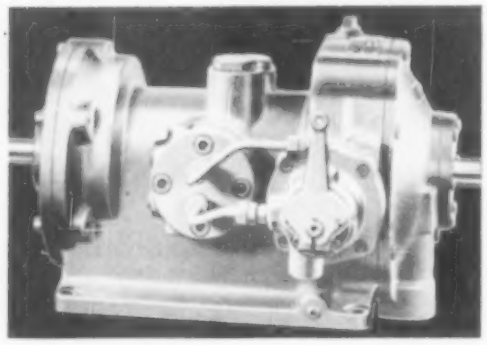
BREFITT—Identify by IEN - 11767 if you write the maker

New! Small!



Oilgear Fluid Power Transmissions

Two-way variable speed. Up to 3 h.p.
Output 0 to 1600 R.P.M. (Reversible)
Lighter · Simpler · Sturdier · Smoother

The outstanding fact about these new, small and versatile Oilgear Fluid Power Transmissions is that during the past 5 years more than 100 thousand similar units have been built, tested and proved in the toughest trials devised by man. They weigh only 90 lbs. They are ruggedly constructed throughout, simple in design, dependable in performance, smooth in operation. These compact units are complete, enclosed and sealed against dirt, with integral relief valves in the fluid passages for protection against overload.

These transmissions efficiently convert a constant rotary motion into accurately controllable variable rotary motion. They provide smooth, stepless, uniform acceleration from zero to maximum in either direction. Their positive drive is not affected to any appreciable degree by variations in load. They use little power and always in proportion to work done.

They provide flexibility of location with convenient nearby or remote control and offer a choice of manual, electric or hydraulic control. They provide quick, unhoused reversal and a host of other advantages.

These transmissions are now used on starch machines, controls in many industries, wire rewinders, spring coiling machines, furnace drives, material supply pumps, gangway feeds, grading wheel, load drives and many other machines and processes. THE OILGEAR COMPANY, 1567 W. PIERCE ST., MILWAUKEE 1, WISCONSIN.

Ask for New Bulletin

Bulletin 67110 completely describes the new small Oilgear Fluid Power Transmission. A copy will be sent free at your request. Write today.

Oilgear Fluid Power

PUMPS, MOTORS, TRANSMISSIONS, CYLINDERS AND VALVES

REPRINT—Identify by IEN-11769 if you write the maker

1=7

One Jomac glove outwears seven ordinary work gloves.

Now more than ever before you need the best in gloves to speed production.

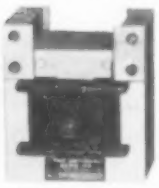
Jomacs are
Washable
Cut-Resistant
Flexible
Heat-Resistant
Reversible
Don't Snag or Tear

JOMAC WORK GLOVES
C. WALKER JONES CO.
6135 N. Lambert St. Philadelphia 38, Pa.

REPRINT—Identify by IEN-11770 if you write the maker

WHERE PROFIT DEPENDS UPON PRECISION PERFORMANCE—*FAST*

Plageman Picks NAMCO "Stellite"-Welded SOLENOIDS



Five pull-type Namco "Stellite"-Welded Solenoids in sizes of from 2 1/2 pounds, 1/2" stroke to 11 pounds, 1" stroke, are used in the Plageman Pack-A-Matic seed packaging machine.

The Pack-A-Matic automatic seed packaging machine, manufactured by Plageman Enterprises, Willoughby, Ohio, has a capacity of up to 4500 packages per hour.

Up to 4500 packages per hour! That's the capacity of the seed packaging machine. It means 4500 complete cycles every hour. 4500 chances to lose money through improper functioning. No wonder precision performance is a "must".

That's why Plageman Enterprises has standardized on Namco "Stellite"-Welded Solenoids to activate key operations of the Pack-A-Matic automatic seed packaging machine. Instantaneous and positive action of each of five Namco Solenoids safeguards the perfect timing and sequence of the complete machine cycle. And close ones aren't good enough—each motion must be "on the nose" to prevent jamming.

If you have similar key operations on your products—points where you need a push or a pull of up to 25 pounds—it will pay you to investigate Namco Solenoids. They're tops for rugged mechanical construction, for dependable fast operation, for low current consumption. May we show you how they can be engineered for your specific application?

175 East 131st Street • Cleveland 5, Ohio

ELECTRICAL MANUFACTURING DIVISION

THE NATIONAL ACME CO.
CLEVELAND, OHIO

NEW LITERATURE—Concluded

"Send your new literature for review"

TESTING . . . Radiation detection demonstrator for processed film badge service: description. Bulletin 496, 3 sheets. Photovoltic Corp., 40 Madison Ave., Box 1103, New York 10, N. Y. IEN-01561

TESTING . . . Small portable polariscope for Hilvault acc. review of major batteries and uses. Folder, "Model D," 2 pages. West Shore Laboratories, Box 117-A, Marlborough, Mass. IEN-01562

THERMOCOUPLES . . . Standard assemblies for engine and aircraft use, illustrated details. Catalog Section 11, 12 pages. Thermo Electric Co., 22-24 Kingsland St., Fair Lawn, N. J. IEN-01563

THERMOCOUPLES . . . In base and metal metals: catalog data, also accessories, pyrometer tables. Bulletin TC-S, 42 pages. Wheaton Instruments Co., 845-8 W. Harrison, Chicago 7, Ill. IEN-01564

THERMOSTATS . . . Type-S bimetal, units to 450 deg. F., principle, component-control, models. Leaflet F-500, 2 pages. Stevens Mfg. Co., 47 Richland Trust Bldg., Mansfield, Ohio IEN-01565

TRAPS . . . "Super Silverton" steam traps, inverted bucket design: capacity, prices, list prices. Bulletin 500, 4 pages. V. D. Anderson Co., 1202 W. 96th St., Cleveland 2, Ohio IEN-01566

TRUCKS . . . Fork lift trucks, electric and engine-drive, also tractors, attachments: condensed data. Catalog TC-H, 8 pages. Clark Equipment Co., Battle Creek 48, Mich. IEN-01567

TUBES . . . Welded steel tube for mechanical and structural use: manufacture, weights, dimensions. "Welded Tubing," 8 pages. Howard Rust Co., 1900 Lansingtown Ave., Warren, Ohio IEN-01568

VALVES . . . Pressure relief valve to protect against water line surges: description. Bulletin W-1, 8 pages. Grifco Automatic Specialty, 3050 Kilbourne Bldg., Pittsburgh 22, Pa. IEN-01569

VALVES . . . "Cam Shell" plug valves: sectional view, catalog data on 8 original models to 10 in. size. Bulletin 30-C, 24 pages. Homo-Crank Valve Mfg. Co., P. O. Box 86, Conneaut, Pa. IEN-01570

VALVES . . . Self-contained flow-regulating valve for liquids: cutaway view, description, uses. Bulletin 305, 8 pages. W. A. Kates Co., 430-27 Washington Blvd., Deerfield, Ill. IEN-01571

VALVES . . . Temperature and pressure-regulating valves: description, pattern numbers on a line. Folder 1400, 4 pages. Spence Engineering Co., 81-87 Green St., Walden, N. Y. IEN-01572

WASHROOMS . . . Washfountains and sanitary showers: condensed data. "Group Washing Equipment," 4 pages. Fredley Washfountain Co., 2210 W. Michigan St., Milwaukee 1, Wis. IEN-01573

WATER TREATING . . . Electric unit to treat boiler water for scale control: models, operation. Bulletin 100, 4 pages. Aqua Electric Scale Control, 2008-30 E. 22nd, Cleveland 3, Ohio IEN-01574

WATER TREATING . . . Zeolite softener: specifications on models to 100 gpm., drawings, dimensions. Bulletin 1000, 4 pages. Cochrane Corp., 3122 N. 12th St., Philadelphia 30, Pa. IEN-01575

WELDING . . . Tungsten electrodes for inert gas and atomic hydrogen arc: properties. Bulletin TWE-1, 4 pages. Fansteel Metallurgical Corp., 2204 Sheridan Rd., North Chicago, Ill. IEN-01576

WELDING . . . Gas torches and accessory equipment for welding, cutting, brazing: data. Bulletin, 4 pages. Industrial Gas & Welding Laboratory, 1720-42 Broadway, Schenectady 6, N. Y. IEN-01577

WELDING . . . Gas torches and accessories for welding and cutting: condensed data. Form CW-1000, 16 pages. National Welding Equipment Co., 216-20 Fremont, San Francisco 5, Calif. IEN-01578

WELDING . . . "Modo-Weld" Model FMW-2-0F spot welding machine, 100 KVA.: performance curves. Bulletin Un-67, 6 pages. Sciaky Bros. Inc., 4017 W. 47th St., Chicago 29, Ill. IEN-01579

WOOD WORKING . . . Model D-200 multiple spindle boring machine: arrangements, examples of use. Bulletin 100, 20 pages. P. M. Heat Co., 422 E. Mountain St., York, Pa. IEN-01580

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 58

REPRINT—Identify by IEN-11772 if you write the maker

BASA HAMMERS • FAVORITE WRENCHES • EMPIRE MALLETS

PALMETTO Packings

MORAN'S COUPLINGS • "TUSKO" WALRUS POLISHING LEATHER

PALMETTO MOLDS A KUP THAT NEVER DRIES OUT

will not "dry out" under years of hot or [illegible] weather conditions. Special Palmetto compounds [illegible] Kup resilient at all times. [illegible] makes Kup the [illegible] longer life, less downtime of air cylinder operated equipment.

ANOTHER THING. Kup is stronger of the duck—because the molding compound, reinforced with fabric, is molded on [illegible] sides and [illegible] are reversed to shape.

Palmetto Kup is available, with or without fabric, in [illegible] and [illegible], to take every hydraulic and pneumatic application.

Write for Bulletin MP-20

GREENE, TWEED & CO.
NORTH WALES, PENNSYLVANIA

Contact your fully-stocked Palmetto distributor on all packing problems . . . ask him about our special tools.

REPRINT—Identify by IEN-11773 if you write the maker

NEW! NEW! NEW! NEW! NEW!
MEASURES POWER WITHOUT INTERRUPTING SERVICE !!

Hook-On Wattmeter

List Price $84.75

With G-E's new hook-on wattmeter you can measure a's power without cutting conductors or interrupting service. Just clip the long voltage leads to terminals or binding posts, snap the hook around the conductor, and you're ready to read.

It's ideal for hunting phantom power losses, many other applications. Simple to use, weighs only 2½ pounds. Ask your local G-E distributor about the AC-2 wattmeter, or write Apparatus Department, General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

REPRINT—Identify by IEN-11774 if you write the maker

NOW! A wiping tissue 100% grit-free

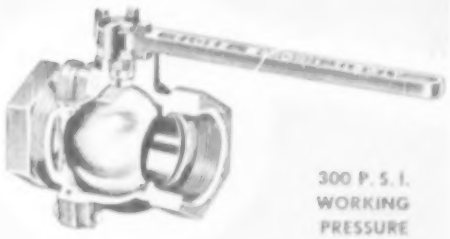
To make your cleaning operation efficient—economical. Fresh, soft, highly absorbent Kimwipes* industrial wiping tissues. Polish finished surfaces without scratching. Blot up to 15 times their weight in liquids. And so inexpensive, you can use a new tissue every time.

Write for further information and name of the Kimwipes distributor nearest you.

Kimberly-Clark Corporation
Neenah, Wisconsin

REPRINT—Identify by IEN-11775 if you write the maker

OUT-PERFORMS THEM ALL!



300 P. S. I. WORKING PRESSURE

ROCKWOOD Ball VALVES

from already made, in many types of industries, an out standing record for longer, uncomplicated, efficient performance.

The full round flow, tank proof seating, quick opening and closing and no maintenance features make Rockwood Ball Valves your best valve buy on the market. These remarkable engineering features will give efficient and economical service. Years then years of everyday rugged use. Together, they help increase your profits and reduce your maintenance cost. Available in all grade sizes from ½" to 4".

Write for illustrated folder 4-A

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

▼ BREVITY—Identify by IEN - 11776 if you write the maker ▼

now Ingersoll
your prime source of supply
for SPECIAL STEELS

Alloy Steels . . . Armor Plate . . . Clutch Plate Steels . . . Tillage Steels . . . Soft Center Steel . . . Shovel Steels . . . Knife Steels . . . Saw Steels, Including Hack Saw Blade Steels . . . TEM-CROSS Steel . . . Stainless Steels . . . INGACLAD Stainless-Clad Steel

Ingersoll STEEL DIVISION

BORG-WARNER CORPORATION
New Castle, Indiana
Plants: New Castle, Indiana; Chicago, Illinois; Kalamazoo, Michigan

▼ BREVITY—Identify by IEN - 11777 if you write the maker ▼

No need to jam a Dart to get it tight. The true ball joint—with precision ground bronze to bronze seats—always gives a snug fit without excessive wrenching. An important reason why Darts always tighten so easily—then uncouple easily for repeated use. And, in service or storage, the practically indestructible air refined malleable iron body and nut keep the seats safe from damage.

E. M. DART MFG. CO., Providence 5, R. I.

▼ BREVITY—Identify by IEN - 11778 if you write the maker ▼

6 TO 1 ONE Indicator Plug Connects to any of SIX Thermocouple Jacks

MULTI-POINT PYROMETER INDICATOR

Accurate
Sturdy

Indicates temperatures of various applications.

Stocked in five temperature ranges.

Polarized Jacks and Plugs of thermocouple materials.

Instrument compensated automatically for cold junction temperature changes and instrument temperature resistance coefficient.

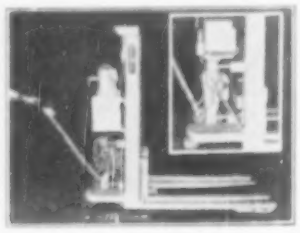
WRITE FOR CATALOG SECTION 25K

Thermo Electric CO., INC. — FAIR LAWN NEW JERSEY

▼ BREVITY—Identify by IEN - 11779 if you write the maker ▼

TRUCK . . Power lift fork design particularly for use in narrow aisles

Source: MOTO-TRUC CO.
1955 E. 59th St., Cleveland 3, Ohio



Shortie Hi-Lift is new design of the company's battery-powered fork truck for pallets and skids with loads to 1½ or 2 ton. The truck measures 23½ in. in length from the front to the face of the forks or 10 in. less than the previous design. The shortening was accomplished by mounting the battery above the drive and assembly of control and steering handle. The operator walks beside the truck. Travel speed is 2½ mph. with a load, 3 mph. free. Swivel casters provide four-point load support. Coil springs maintain traction for the drive wheel.

Two ratings are 1½ and 2 ton. Fork lengths are 36 to 48 inches. Lift is in five ranges between 80 and 120 in. with collapsed heights between 67 and 81 inches. Lift speed is 12 fpm. with a 1-ton load and 12-volt drive, 20 fpm. when the drive is 18 volts. The battery compartment can be built for 12 or 18-volt battery rating 250 or 400 ampere hours.

The roller grips on the steering handle are turned for travel in first and second speed, direction of turning determining travel direction. Pushbuttons in the grip ends control the hydraulic lift and lower movements. Moving the handle to vertical or horizontal position sets the travel brake.

▼ BREVITY—Identify by IEN - 11780 if you write the maker ▼

BUILDINGS . . Translucent sheets to replace windows in building walls

Source: ROHM & HAAS CO.
220-24 Washington Square, Philadelphia 5, Pa.

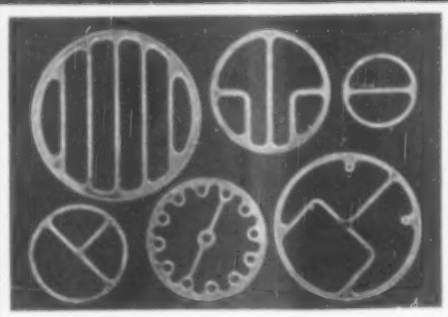
New application of the company's translucent Plexiglas is in corrugated form in openings in building walls as in the illustration. The openings shown are 16 ft. in length and are covered by four 48 by 72 by .125-in. corrugated sheets measuring 2½ in. in frequency. The sheets are lapped by one corrugation with the building's galvanized iron sheathing and with adjoining edges of each other.

Panels are held in place, top and bottom, by 20-gage sheet-iron flashing. They are bolted at the bottom and free riding at the top. Bolt holes are grommeted to prevent injury to the plastic during expansion and contraction. Sheet sizes range to 60 by 96 in. in 2½ in. corrugations 1 in. in height. They are available in various sizes for other types of corrugated construction such as asbestos-cement, Protected Metal. A V-rib site measures to 64 by 100 inches. Flat sheets of the plastic material measure 6 by 12 in. to 96 by 120 inches. Thicknesses range from 1/8 to 3 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11781 if you write the maker ▼

MELRATH GASKETS



FOR HEAT EXCHANGERS, CONDENSERS, CYLINDER HEADS

Style No. 20 (Special) Metal and asbestos double-jacketed gaskets for high temperatures and pressures. Made in any metal or shape to fit your needs.

"There's a Melrath Gasket for Every Purpose!"

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

▼ BREVITY—Identify by IEN - 11782 if you write the maker ▼

It takes a lot of water to keep your good name clean!

Hoover ELECTRIC MOTORS

Wherever jet pumps deliver water—kitchen, bathroom, lawn or farm—the pump's good name depends on furnishing water reliably and without breakdown. That's why so many manufacturers pair their pumps with Hoover Motors . . . for long, quiet, dependable service. If you make jet pumps—or any other motor-powered equipment—you'll find a Hoover Motor to fit your requirements and help keep YOUR good name clean!

Hoover Jet Pump Motors available ¼ through 1½ H.P., capacitor start and polyphase 1425 R.P.M. Ball bearings. Shaft end bearings are locked eliminating end play. Temperature rise rating 40° C (continuous, except 50° C for 1½ H.P.). Dripproof construction.

Write for complete information to
THE HOOVER COMPANY
Kingston-Conley Division
78 Brook Avenue
North Plainfield, New Jersey

▼ BREVITY—Identify by IEN - 11783 if you write the maker ▼

specialists in CMP THINSTEEL

These three steel warehouses normally carry in stock the complete range of cold rolled strip steel specialties made by The Cold Metal Products Company, including low carbon and high carbon analyses, tempered spring steel and stainless grades in the 200 and 400 series. Supply problems are now very difficult. Currently, shortages exist in some grades and sizes, but within the limits of inventory possibilities strip steel fabricators continue to find justification for the descriptive phrase long identifying all Precision produced CMP products—"More feet per pound—more finished parts per ton."

IN THE EAST IT'S THE KENILWORTH STEEL CO.

Located in the metropolitan New York area for quick service throughout the east. 750 Boulevard, Kenilworth, N. J. Phones: New York—COurtlandt 7-2427; New Jersey—UNionville 2-6900.

IN THE MIDWEST IT'S PRECISION STEEL WAREHOUSE, INC.

Well known in the Chicago district for good service and careful attention to customers' requirements. 4409-4425 West Kinzie Street, Chicago 24, Illinois. Phone: COlumbus 1-2700.

IN THE FAR WEST AND PACIFIC COAST IT'S THE COLD METAL PRODUCTS CO. OF CALIFORNIA

On the west coast the only specialists in light gauge precision cold rolled strip. 6600 McKinley Avenue, Los Angeles, California. Phone: PLeasant 3-1291.

PRECISION COLD ROLLED CMP STRIP STEEL

the Cold Metal Products co.
YOUNGSTOWN 1, OHIO

NEW YORK • CHICAGO • DETROIT • INDIANAPOLIS
LOS ANGELES • ST. LOUIS

BREVITY—Identify by IEN - 11785 if you write the maker

For years Ex-Cell-O has been known by American industry as headquarters for precision-made bushings . . . Ex-Cell-O carries one of the largest and most varied stock of drill jig bushings available in the world.

EX-CELL-O CORPORATION • DETROIT 32, MICHIGAN

BREVITY—Identify by IEN - 11786 if you write the maker

"SQUEEGEE ACTION" STOPS VALVE LEAKS

There's a conforming "give" in a rubber squeegee that covers all the surface it contacts and wipes dry.

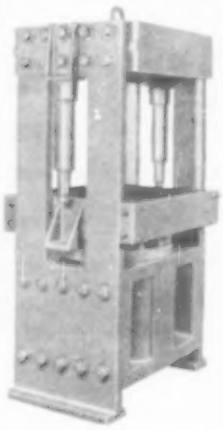
In the same way, there's a "give" in the tough rubber face of DeZURIK valve-plugs that give them "squeegee action" on the valve seat . . . produces a skin-tight, bone-dry closure. The plug-face conforms and seals even if the valve-seat is worn or if it harbors scale or foreign matter.

A trial installation of DeZurik Easy-Operating Plug Valves will prove that leakage can be stopped! Write for catalog.

DeZURIK SHOWER CO.
SARTELL, MINNESOTA

BREVITY—Identify by IEN - 11787 if you write the maker

Hydraulic Presses



MADE IN CANADA
Built to American Standards

For molding, forming, laminating, hobbing, straightening, polishing, etc.

Standard work area.
Sizes 12" x 12", 16" x 16", 24" x 24", 24" x 30", 30" x 30" and 36" x 36".
Special Sizes to order.

Auxiliary equipment
- Steam Platens
- Electric Platens
- Hand hydraulic pumps
- Power Oildraulic Units
- Transfer molding units

Descriptive literature upon request.

Representatives Invited

Engineering Division VICEROY West Toronto, Canada
MANUFACTURING COMPANY LIMITED
Press builders for 20 years.

BREVITY—Identify by IEN - 11788 if you write the maker

MILLING . . Universal machine particularly for general tool room work

Source: FRAY MACHINE TOOL CO.
509 W. Windsor Road, Glendale 4, Calif.

No. 10-K is a new universal machine in the company's ram-type line. It mounts a motor-driven head with 3½ in. of spindle travel that can be rotated around its supporting overarm through 360 deg. and can be positioned at any angle between vertical and horizontal toward the front or rear.

The overarm mounts on ways for movement across the table through 10 in. and also for 10 in. of movement parallel to the table length. The table measures 9 by 36 in. and has 22 in. of longitudinal movement. Cross feed is through 8½ inches. Maximum distance spindle to table with the spindle vertical is 19 inches. Vertical table adjustment measures 17 inches.

Dials on each of the feeds and adjustments are graduated in thousandths. Spindle speeds with a 1-hp. 1,200-rpm. motor are between 100 and 1,250 rpm. Collet capacity is ¼ to 1 inch.

BREVITY—Identify by IEN - 11789 if you write the maker

INSULATING . . Inhibited oil for pole type distribution transformers

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., P. O. Box 868-A, Pittsburgh 30, Pa.

Not for mixing with other oils

Wemco C is a new inhibited oil which the company employs as a standard in its pole-type distribution transformers rating 100 kva. or smaller. Oxidation resistance is excellent. Life of the oil is about three times that of uninhibited oils previously used. Electrical characteristics are not affected.

BREVITY—Identify by IEN - 11790 if you write the maker

SEPARATING . . Vibrating screen removes sludge entrained in coolant

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

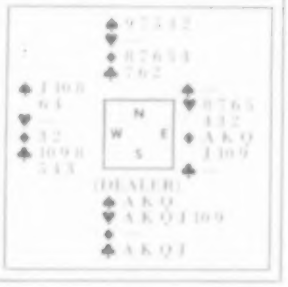
New application for the company's electrically-vibrated feeder is on a screen inserted into the return flow line for coolant from a grinding machine to its sump. The screen stops about 90 per cent of the sludge and the vibrating action moves it for continuous discharge. The coolant flows through the screen and back to the sump. Model SF-01 designates the vibrating equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

BREVITY—Identify by IEN - 11791 if you write the maker

It's a Fooler

If you play bridge you've probably met some version of the Finnegan Hand listed. Good or the "Good hand looks, it can't ever make a vul game hand. Try it and see.



There's no fooling when
TORIT DUST COLLECTORS
go after dust in your plant

You know a great deal about when you sweep yourself, grinding and polishing machines with Torit Dust Collectors. Fumes invisible without are serving production between. They capture dusts. What and then introduce the cleaned air back into the room. With the conditions are harmful, there are no heat losses, and operating and maintenance costs are very low — you don't miss a trick.

Torit Dust Collectors come in many sizes and models. They are adaptable to nearly all industrial operations. So, if you have a dust problem, put in your bid to:

TORIT
Manufacturing Co.
286 Walnut St., St. Paul 2, Minn.
P. S. Ask for the new Torit catalog

BREVITY—Identify by IEN - 11792 if you write the maker

Where You Get Greatest Air Economy

using "Buffalo" AXIAL FLOW FANS

Where space is short, where you can mount the fan in STRAIGHT ductwork, where you need light-duty ventilation, exhaust or air conditioning supply—be sure to look into "Buffalo" Axial Flow Fans. Their light weight, their compact design, their backlow air delivery, their non-overloading features—make them ideal, efficient fans for your use. Thousands in use throughout Industry. WRITE FOR BULLETIN 5004.

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in all Principal Cities

"Buffalo" AXIAL FLOW FANS
"Air travels the Bee-Line Route"

BREVITY—Identify by IEN - 11793 if you write the maker

The MHS Junior Monoveyor provides a means of handling light and medium loads overhead more efficiently and more economically than with the standard conventional overhead conveyor. It may be used to meet any specific manufacturing, transporting or storage requirements where loads and distances are appropriate.

It is constructed of standardized precision made components, mass produced for maximum economy. The selection of these components is sufficiently wide to permit full flexibility.

Line friction has been reduced, turnings may be deeper and minimum allowable radii are substantially less than they are with the standard conventional overhead conveyor.

For details and specifications, write for Bulletin 08-1.

Mechanical Handling Systems Inc.
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities

BREVITY—Identify by IEN - 11794 if you write the maker

WORLD-WIDE SALES AND SERVICE OF HYSTER TRACTOR EQUIPMENT BY MORE THAN 400 "CATERPILLAR" DEALERS

"Caterpillar" dealers around the globe are Hyster tractor equipment sales and service stations. They are the agents of the world's largest lift truck. Hyster tractors are used by the equipment sales organized. The major's authorized Hyster parts from most equipment stocks.

Hyster has made tractor tools for 40 years, a contribution "Good Tools Tractors for more than 30 years, with experience to design and build equipment to meet the needs of today's logging, mining, construction and industrial operations.

HYSTER® COMPANY
1914 N. E. Clackamas, Portland 8, Ore.
1914 South Adams, Peoria 2, Ill.

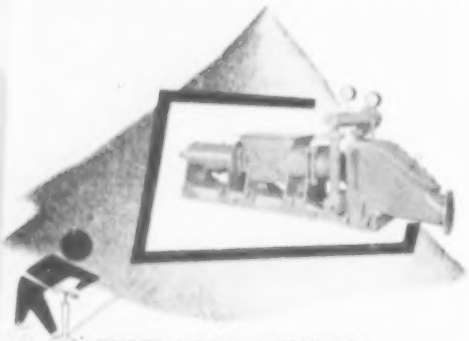
▼ PREFIX—Identify by IEN - 11795 if you write the maker ▼

PULLS, KNOBS and PENDANTS

Specify Grigoleit molded plastics and you'll be ahead in time and money. They're styled for sales . . . ready for prompt delivery. Write today for fully-illustrated catalog.

THE GRIGOLEIT COMPANY
"Over Twenty Years in Plastics"
142 E. NORTH ST. DECATUR, ILLINOIS

▼ PREFIX—Identify by IEN - 11796 if you write the maker ▼



PUMP YOUR POWDERS with a FULLER-KINYON SYSTEM!

Powders that can be aerated flow like water—anywhere in a plant—when they're pumped by Fuller-Kinyon. Such dry, pulverized materials can be automatically distributed to any desired number of bins in sequence. No dust nuisance . . . no waste . . . safe . . . sanitary . . . low power . . . low maintenance. If you have a bulk dry material handling operation, it will pay you to ask Fuller about it. Write for further information.

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—130 So. LaSalle St.
San Francisco 4—420 Chronicle Bldg.

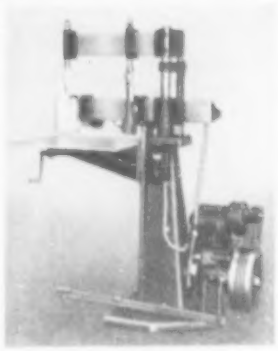
fuller DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

▼ PREFIX—Identify by IEN - 11797 if you write the maker ▼

VERSATILITY

for DOZENS OF INDUSTRIAL JOBS

THE LOW-COST, HEAVY DUTY **SARANAC** General Purpose **STAPLER**



Here's a low priced, heavy duty machine that will cut costs for you on a wide variety of fastening jobs. Makes joints tighter, stronger than nailing. Stapling heads make and drive their own staples from reels of wire purchased on the open market. Staple sizes available range from 3/16" x 1/2" to 1" x 1 1/4" or 5/8" x 1 1/2". The heads are adjustable horizontally, and can be mounted for driving 0°, 45°, or 90°. 20" table is adjustable vertically through 20".

BULLETIN 166 GIVES FULL DETAILS ON THIS PROFIT PRODUCER. ASK FOR IT TODAY.

SARANAC MACHINE CO.
BENTON HARBOR MICHIGAN

▼ PREFIX—Identify by IEN - 11798 if you write the maker ▼

CONVEYING . . Screw type equipment with sealed dust tight driving end

Source: KORNYLAK ENGINEERING CORP.
513 Communipaw Ave., Jersey City 4, N. J.

New end plate design in the company's line of screw conveyors, each of which is built to meet specified requirements, employs a stuffing box in the end plate at the drive end with rings of graphited packing and a bronze follower. The screw shaft is mounted in a ball bearing that is grease lubricated and sealed. The stuffing box can be opened and adjusted without disturbing the bearing. The new assembly is available on any of the company's screw conveyors in 6 to 20-in. sizes.

▼ PREFIX—Identify by IEN - 11799 if you write the maker ▼

VALVE . . Sliding stem pneumatic with die cast housing, 1/4 and 3/8 in.

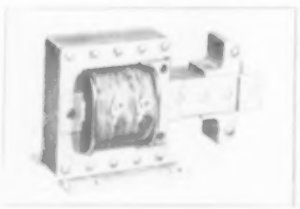
Source: YALVAIR CORP.
452-56 Morgan Ave., Akron 11, Ohio

Pressure to 175 lb. and temperature to 175 deg. F. can be handled with this new die-cast air-control valve. It is applied also for use with water or oil. Pressure is sealed in both the on and off positions. Cylindrical ends, stem packer spreader, flange end and sprocket are interchangeable in the two sizes. Overall length is 4 3/8 and 5 in. in the two sizes in the line. Two and three-way assemblies are in the line.

▼ PREFIX—Identify by IEN - 11800 if you write the maker ▼

SOLENOID . . T-type design for pull application, 1 3/8 in. stroke

Source: SORENG MFG. CORP.
9553-57 Eden Ave., Schiller Park, Ill.



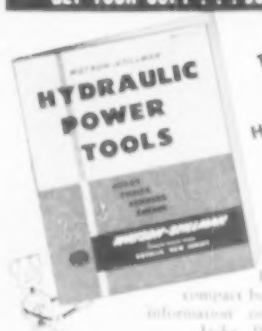
No. 12800 is a new unit in the company's line of ac. solenoids. It is available as specified for operation on circuits to 600 volts and standard frequency. Pull rating is 6 to 16 lb. on steady duty, 11 to 29 lb. on intermittent duty. Terminals and mounting brackets are designed to meet stated requirements. Double shading coils minimize hum.

Overall dimensions in the arrangement illustrated are 2 7/8 in. in base length, 2 5/8 in. across the base flanges and about 3 in. in height. Laminations are riveted.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

▼ PREFIX—Identify by IEN - 11801 if you write the maker ▼

GET YOUR COPY . . . JUST OFF THE PRESS



The NEW Watson-Stillman Hydraulic Power Tool Bulletin A-5

Not a catalog . . . but a condensed power tool reference brochure with all material reduced to its simplest form.

Easy to read—this brief but compact booklet gives you, at a glance, information on modern Watson-Stillman Jacks, Pumps, Benders and Shears.

Products are illustrated . . . operating features described . . . constructions detailed . . . a wealth of pertinent information is contained in its pages. It's . . . invaluable when you need Power Tool information—and it's FREE . . .

SEND FOR YOUR FREE COPY TODAY

WATSON-STILLMAN
Established 1848
Distributors Products Division
ROSELLE, NEW JERSEY, U. S. A.

▼ PREFIX—Identify by IEN - 11802 if you write the maker ▼

Better Coating at Lower Cost with

POTDEVIN Coating Machines

Manufacturers in every field have been depending on their "POTDEVINS" to cut down operating costs.

Illustrated is Model 2 R for applying any type coating to any kind of material.

There is a POTDEVIN coating machine for every job, from a 12-inch hand-operated model for small work to a giant 60-inch semi-automatic for mass production. Such coating materials as hot or cold glues, latex, resins, paint, varnish and lacquer, as well as many of the new type coating materials, work with equal ease . . . and the amount of coating is always radio controlled. Write POTDEVIN today for full particulars and discover how easy your coating problem can be solved with a "POTDEVIN" machine. And you don't need skilled help to operate a POTDEVIN.

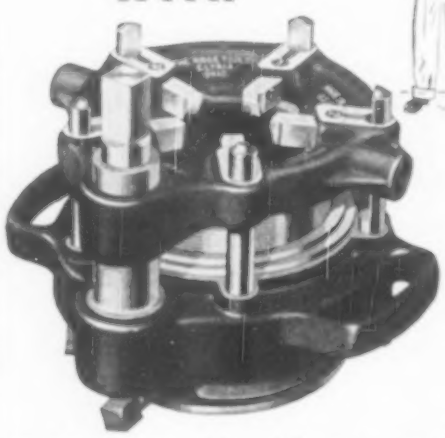
POTDEVIN MACHINE CO.
1212 38th St., Brooklyn 18, N. Y.

Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling.

▼ PREFIX—Identify by IEN - 11803 if you write the maker ▼

A Geared Pipe Threader THAT'S EASY TO WORK WITH

"These big solid handles make it a cinch to lift and carry the RIDGID 4P!"



RIDGID No. 4P cuts perfect threads on 2 1/2" to 4" pipe

● No matter how good a threader is, it's a lot better if it's easy to handle. RIDGID 4P has balanced loop handles so you can easily pick it up and put it on pipe—even when it's greasy and you're tired. Mistake proof workholder sets to size *before* you put it on pipe, one screw to tighten, no bushings. 4 sets of 5 high-speed steel chaser dies give clean accurate threads on 2 1/2", 3", 3 1/2" and 4" pipe. Ratchet handle furnished—RIDGID Universal Drive Shaft and Power Drive available for power-threading. For perfect threads, easily, order the RIDGID 4P from your Supply House.

RIDGID
WORK-SAVER PIPE TOOLS
THE RIDGE TOOL CO. • ELYRIA, OHIO

▼ BREVITY—Identify by IEN - 11805 if you write the maker ▼

IMPORTANT NEW FACTS ON WIRE AND PIPE MARKING

If you mark parts, wire, cable, conduit or terminals you should have this comprehensive new E-Z Code catalog that contains valuable ideas to save you time and money. Write for your free copy today!

FREE SAMPLES WRITE TODAY

Make an on-the-job E-Z Code test

E-Z Code Markers are quickly ripped off card by individual Speed Tabs, instantly applied without numbering. Stick permanently, even when pulled through conduit. Provide positive identification, even in dark corners. Available in 350 standard codes (including ASA and NEMA) or to your specifications.

WESTERN LITHOGRAPHY CO., DEPT. IEN 32
E. SECOND ST., LOS ANGELES 54, CALIF.

▼ BREVITY—Identify by IEN - 11806 if you write the maker ▼

ELECTRIC WHEELS

Modernize Trucks and Trailers

A full line of wheels for baggage trucks, industrial trailers, floor trucks, mail carts and other portable equipment.

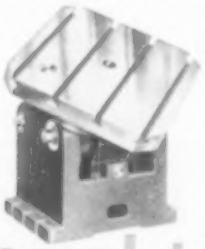
ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles. Steel tires, molded-on-tires, or pneumatic tires.

There is a full range of sizes and our experienced engineers are at your service.

Write us for full information.

ELECTRIC WHEEL CO., 2932 Spruce, Quincy, Ill.

▼ BREVITY—Identify by IEN - 11807 if you write the maker ▼



universal tables

THE CINCINNATI
GILBERT
MACHINE TOOL COMPANY

save up to 50% of set up time on radials, boring mills

Just one setup enables you to drill at any angle up to 90° on five sides of a cube. But that's only half the story! Cincinnati Gilbert Tables provide four-point support of the work when in the lowered position, without strain on the worm. Thus you get the greatest possible rigidity of the work, greatest assurance of accuracy, better ease of operation.

Two sizes: tops 22" square and 27" square; table height: 22". Four ¾" tee slots; center hole 2" diameter. Write for complete facts on all Cincinnati Gilbert accessories: Bulletin 749.

THE CINCINNATI GILBERT MACHINE TOOL CO. • CINCINNATI, OHIO

▼ BREVITY—Identify by IEN - 11808 if you write the maker ▼

WOOD WORKING . . Eight inch jointer drives four knife head at 4,100 rpm.

Source: DELTA POWER TOOL DIVISION
614 E. Vienna Ave., Milwaukee 1, Wis.

Cutting and rabbeting capacities are to 8 in. in width and to ½ in. in depth on this new Crescent machine. It mounts a 9¾ by 30 in. cast iron table with ground finish and a ball-bearing sealed four-knife cutter head for belt connection to a motor rating ¾ to 1½ hp. and operating at 3,725 rpm. The motor, available as an extra, mounts to the base on a plate providing adjustment for belt tension. The machine is equipped with a 34 by 4 in. fence that tilts through 45 deg. to the right or left. List price is $340 without the motor.

▼ BREVITY—Identify by IEN - 11809 if you write the maker ▼

BOILER . . Self-contained design, 350 and 400 hp., oil, gas, combination

Source: CYCLOTHERM CORP.
161-5 E. First St., Oswego, N. Y.

Specifications are available upon request

New assemblies of the company's horizontal two pass boiler and centrally located furnaces have been equipped with interchangeable burner equipment to fire light or heavy fuel oil, gas, or a combination of gas and oil. Two units known as C 12400 and C 12800 rate 250 and 400 hp. or 12,075 and 19,800 lb. of steam per hr. from and at 212 deg. F. Each assembly is self-contained and ready for connection to shop service lines for water, fuel and electric current. Various operating pressures can be specified between 15 and 150 pounds. Base dimensions are 232 by 86 inches.

▼ BREVITY—Identify by IEN - 11810 if you write the maker ▼

MIXING . . Stand mounted machine elevates and tilts, mounts 5 hp. motor

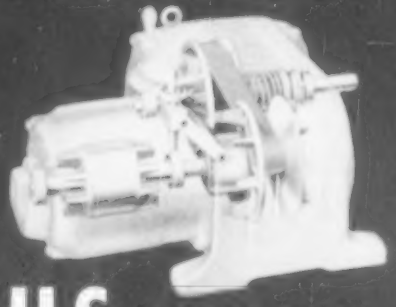
Source: COWLES CO.
501 Trackside, Cayuga, N. Y.

Model 7VT is a new stand-mounted mixer or dissolver to work batches of materials of 5 to 100 gal. in containers. The 5 hp. motor is explosion-proof design. It is assembled under a slide so it can be adjusted for V belt sheaves of various sizes to obtain desired speed at the stainless steel impeller. The machine elevates through 11 in. in vertical direction. It also tilts upward through a 60 deg. arc. List price of the new mixer assembly is $790.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ BREVITY—Identify by IEN - 11811 if you write the maker ▼

GET 10 HOURS WORK IN 8



U.S. VARIDRIVE MOTOR — 1 to 10,000 R.P.M.

PRECISELY THE RIGHT SPEED FOR EACH AND EVERY OPERATION INSTANTLY

Ask for Descriptive Bulletin

U.S. ELECTRICAL MOTORS, Inc.
Los Angeles 54, Calif. Milford, Conn.

▼ BREVITY—Identify by IEN - 11812 if you write the maker ▼

REPLACE 29 SIZES WITH THESE TWO

NEW GIANT ALLOY adjustable wrenches

THINNER-LIGHTER-STRONGER

Until now 29 wrenches have been needed to handle the jobs done by these two new giant adjustable wrenches. They are THINNER at the work jaws. Strong-enough for added strength at leverage points. Lighter-in make and carrying ease. Economical—save time, tools and materials. Large jobs become simple jobs.

Giant plier wrench No. OA-14 is 14" long, ⅛" thick, weighs only 10 lbs. and adjusts to 14 standard sizes from 1⅛" to 2½". OA-16 is 15" long, ⅛" thick, weighs only 10 lbs. and adjusts to 16 standard sizes from 2 15/16" to 4½".

ANOTHER EXAMPLE OF ENGINEERING THAT MAKES OTC TOOLS OUTSTANDING

OWATONNA TOOL CO.
271 CEDAR ST., OWATONNA, MINNESOTA

▼ BREVITY—Identify by IEN - 11813 if you write the maker ▼

NEW

There's always something new in RAPISTAN

ALUMINUM POWER BELT CONVEYOR

Light weight, versatile power belt conveyor for loading, unloading or stockout all types of packaged or bagged materials! It's the new aluminum Stratoflex. It's easy to move from job to job, place it easily in position! Capacity to 750 lbs. Non-corrosive. Lengths from 12' to 21'. Belt widths, 10" and 16". Uses ¼ HP motor.

Write for prices and descriptive literature!

The RAPIDS-STANDARD COMPANY, Inc.
209 Rapistan Building
Grand Rapids, Michigan

Representatives in Principal Cities

Rapistan® MATERIAL flow EQUIPMENT

CONVEYORS: Power or Gravity, Portable and Stationary. Also CASTERS • HAND & PLATFORM TRUCKS.

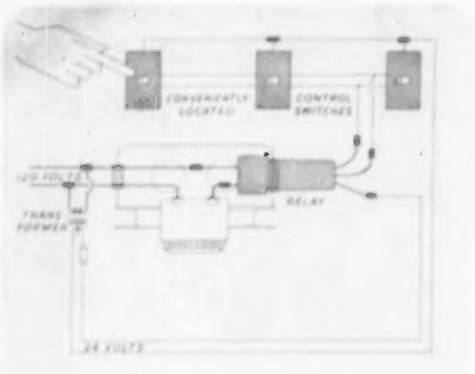
▼ BREVITY—Identify by IEN - 11814 if you write the maker ▼

AIR DRILLS to fit the task!

AIR POWER

Ingersoll-Rand

▼ BREVITY—identify by IEN - 11815 if you write the maker ▼



NEW Remote Control Relay System has many industrial uses

● Originally designed for residential applications, this new, Low Voltage Control System has dozens of industrial applications. Relays are controlled from any number of conveniently located switches operating on 24 volts. Only the load circuit is at 120 volts.

Write for Bulletin 1008, Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

SQUARE D COMPANY

DETROIT · MILWAUKEE · LOS ANGELES

▼ BREVITY—identify by IEN - 11816 if you write the maker ▼

LESS CLEANING TIME

MORE PRODUCTION TIME

WITH A *Doyle* VAC-IT

Subtract from cleaning expenses and add to production profits the time you can save by taking advantage of the powerful cleaning capacity of the Doyle Vac-It. Production machinery is thoroughly cleaned and freed of all clogging dust, dirt and grime in a fraction of the time ordinary cleaning methods take. Metal chips, shavings, grease and liquids are quickly removed from working surfaces leaving them clean and dry. So efficiently does the Doyle Vac-It perform that it is not necessary to stop production or shut down machinery during cleaning.

Write today for informative Doyle Bulletins. See how you can cut cleaning time and costs throughout your entire plant.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

▼ BREVITY—identify by IEN - 11817 if you write the maker ▼

Nugent Shaft Oiler

Puts a stop to the danger and extra work of shaft oiling

With a Nugent shaft oiler, you'll be able to oil overhead bearings without the dangerous and useless work of climbing a ladder among belts and pulleys. One of these oilers will pay for itself in a week's time.

The Nugent shaft oiler is a two-quart oil can with a 1/8" I.P.S. aluminum tube spout as long as 12 feet. The spout can be bent to any desired angle.

Check your phone directory or write direct.

Wm. W. Nugent & Co., Inc.
418 N. Hamilton Ave. CHICAGO 22, ILLINOIS

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

▼ BREVITY—identify by IEN - 11818 if you write the maker ▼

CHAMFERING . . Pilot mounted cutter for reverse shoulder work in small bore

Source: NOBUR MFG. CO.
715-19 N. Victory Blvd., Burbank, Calif.

Four new sizes have been added to the company's line of chamfering and deburring tools previously described IEN-1097-43. The new units apply to bores from .125 to .189 inch. They are known as Series DS. The pilot is entered into the bore to be chamfered. Application is in any suitable rotating and axial feed spindle.

The operator holds the cutter contained within the pilot in retracted position by operating a knurled sleeve on the head. He advances the cutter when it has passed through the bore, draws the tool back to make the reverse cut. Then he retracts the cutter again and withdraws the tool.

▼ BREVITY—identify by IEN - 11819 if you write the maker ▼

VALVE . . Lever operated for a hose line, 3/4 in. connections

Source: H. B. SHERMAN MFG. CO.
1937 Sperry St., Battle Creek, Mich.

No. 120 is a new valve for use between a hose line and a spray nozzle so a spray pattern can be set and then turned on and off as required. Both ends of the valve are threaded for 5/8-in. hose fittings. The lever is depressed to open the passage and released so flow pressure will close it. A spring assists the closing action. The body is brass.

▼ BREVITY—identify by IEN - 11820 if you write the maker ▼

PROTECTING . . Metal safety goggle guards worker against flying particles

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

Type F-4100 is a new design in the Full-Vue line of metal-frame safety goggles. It is equipped with a flat frame with engraved heading, streamlined end pieces, adjustable temples with insulating tubing over the ear portions, long guard arms for nose pad support, double braced Sampson bridge. Side shields of non-corroding wire mesh or clear acetate can be added. Lenses can be changed without interfering with the side shields should this be required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—identify by IEN - 11821 if you write the maker ▼

$5265.00 F.O.B. factory, in this issue

pays DIVIDENDS . . . FAST!

- **MOBILE BANTAM® CRANE Lifts up to 10,000 lbs.**
- **Mounts on new or used truck**
- **Handles 50' boom . . . 29" magnet . . . 3/8 to 1 1/2 cu. yd. buckets** (depending on use)
- **JOB-PROVED —nearly 2000 Bantams in use, nation-wide distributor service**

(* Prices subject to change without notice)

Clip this ad now!

Mail with your letterhead for money saving facts on versatile truck mounted Bantam cranes. Schield Bantam Co., 2 Park St., Waverly, Iowa.

SCHIELD BANTAM
Costs less . . . travels 35 m. p. h.
GETS MORE JOBS DONE

▼ BREVITY—identify by IEN - 11822 if you write the maker ▼

REDUCE PRODUCTION COSTS—F.O.S. Tape is handy, versatile, inexpensive. Simplifies production in many ways . . . Stays put—but can be removed quickly without requiring "cleanup." Let SEAMLESS analysts show you how to save time and money with F.O.S. No obligation! . . . *Write today for samples and prices.*

Finest Quality Since 1877

INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.

▼ BREVITY—identify by IEN - 11823 if you write the maker ▼

new! complete! free!

To anyone concerned with longer life of wearing parts:

LET THIS BOOK SAVE YOU MONEY!

This brand new catalog is fact-packed with complete information on how you can save *money* and *time* and *replacement labor* . . . through the AMSCO System of Hardfacing. Here's a system based on practical, field-tested methods of applying AMSCO Welding Rods to surfaces subject to wear by impact, abrasion, heat and corrosion. This new catalog *describes* the complete AMSCO line of rods and electrodes . . . *lists* physical characteristics of each rod, with typical applications where spectacular savings can be made.

It's valuable information backed by AMSCO's half-century of experience in solving wear problems.

BE SURE TO SEND FOR YOUR FREE COPY TODAY!

Please send your new catalog describing AMSCO Welding Rods and Electrodes to:

Name _____
Title _____
Company _____
Address _____
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AMERICAN Brake Shoe COMPANY
AMERICAN MANGANESE STEEL DIVISION
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

Other Plants: New Castle, Del., Denver, Oakland, Cal., Los Angeles, St. Louis. In Canada: Joliette Steel Division, Joliette, Que.

▼ PREFIX—Identify by IEN-11825 if you write the maker ▼

DOMOTOR CONTROL VALVE

Stands up where other valves fail –

For Positive Control of Hard to Handle Fluids

Sealed piston in dome actuated by internally controlled differential pressures insures powerful, stable valve action across single seat. Built-in, null-type positioner unit. Simple, versatile valve body available in wide range of alloys for almost any fluid. Ideal for controlling flow of slurries, sludges, acids, caustics, etc. Positive bubble-tight shutoff with Teflon or other synthetic seat. Write for *free* bulletin today!

Look at these specifications

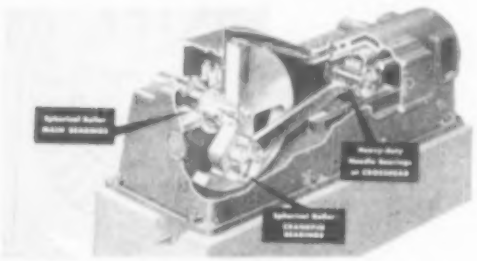
- Pressures to 3000 psi
- Temperatures to 1000° F.
- Sizes ¼" to 4"
- Choice of alloys: Stainless Steel, Durimet 20, Hastelloy, Nickel, Carbon Steel, Bronze, etc.
- Quick change valve seat
- 50% weight reduction

Investigate ANNIN DOMOTOR VALVES *Valves*

THE ANNIN COMPANY

3500 UNION PACIFIC AVENUE • LOS ANGELES 23, CALIFORNIA

▼ PREFIX—Identify by IEN-11826 if you write the maker ▼



FRAME AND RUNNING GEAR OF AN O-CE HORIZONTAL DUPLEX SIDE CRANK COMPRESSOR

FIRST WITH ROLLER BEARINGS THROUGHOUT

IN A HORIZONTAL DUPLEX COMPRESSOR

- SPHERICAL ROLLER MAIN BEARINGS
- SPHERICAL ROLLER CRANKPIN BEARINGS
- HEAVY-DUTY NEEDLE BEARINGS AT CROSSHEAD

Chicago Pneumatic's Class O-CE AIR COMPRESSORS are the first horizontal duplex, side crank compressors to have anti-friction roller bearings throughout . . . spherical roller main and crankpin bearings . . . heavy-duty needle bearings at the crosshead pins.

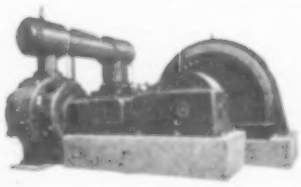
To the user, "roller bearings throughout" means easier and cheaper maintenance, and no possibility of improper bearing adjustment with resultant serious damage to frame and running gear.

Roller crankpin bearings permit the use of solid-end connecting rods—the strongest, safest type.

This revolutionary innovation is made possible by the recent development of the oil injection method of bearing and crank disc installation and removal. This simple method, requiring only a hand-operated oil pump and ordinary hand tools, is employed also for the application or removal of gears, couplings and sleeves on shaft ends.

Class O-CE Motor-driven Compressors are furnished in sizes up to 2000 h.p.

Write for Bulletin 726-5



CLASS O-CE TWO-STAGE MOTOR-DRIVEN COMPRESSOR

CHICAGO PNEUMATIC TOOL COMPANY

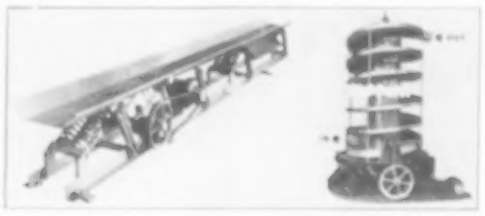
General Offices: 9 East 40th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

▼ PREFIX—Identify by IEN-11828 if you write the maker ▼

CONVEYING . . Vibrating trough, motor driven on coil spring mounting

Source: WHITLEY-CARRIER CO.
209 N. Jackson St., Louisville 2, Ky.



Natural Frequency designates the company's recently improved line of horizontal and vertical vibrating-trough conveyors in which granular, lump, hot, cold, abrasive, corrosive materials are caused to move forward or upward smoothly by the action of a motor-driven eccentric and coil springs. The eccentric is driven at a speed corresponding to the natural frequency of the springs. A dashpot on the arm to which the eccentric rod connects absorbs peak loading. Flexing support arms between trough and base complete the assembly.

The horizontal design is available in 6 to 48-in. width and in length from 5 to 200 ft. with troughs to specified material and depth. One motor is required for each 150 ft. of length. Change in direction is accomplished by using two or more units delivering from one to the other, each complete in itself. Power input rates ¼ hp. for each 10 ft. horizontal length handling 25 ton per hour.

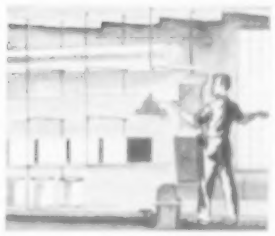
The vertical assembly is mounted on the springs and supports at its base to vibrate but not rotate in a circular path. The unit illustrated mounts a stainless-steel pan 32 in. in width on a center column 18 in. in diameter. Average angle of ellipse is 9 deg. or 1 ft. per turn. Material is conveyed at 60 ft. per min. measured in direction of movement. This type requires spring support at 20 ft. vertical intervals but a single drive will handle a 100-ft. height. Maximum capacity of this particular conveyor is 90 ton per hr. with material weighing 100 lb. per cubic foot.

Bulletin, 12 pages, "Natural Frequency Conveyors", presents illustrated description of horizontal and vertical assemblies with examples of single and combination designs.

▼ PREFIX—Identify by IEN-11829 if you write the maker ▼

STORING . . Wire hangers for single or multiple shelf assembly

Source: AMBLER DISTRIBUTORS
50 Industrial Blvd., Ambler 43, Pa.



Rectangular hangers made of ¼ in. Bethanized steel wire have hooks at their two upper corners to expand evenly from waste or hooks to hang in multiple assembly one under another. Add-A-Pair design. The bottom are formed with depressed corners to take the hooks of a hanger below it and to provide a raised central section to support a shelf board measuring 12 in. to width or to provide direct support for pipe, tubing, box stock, timber.

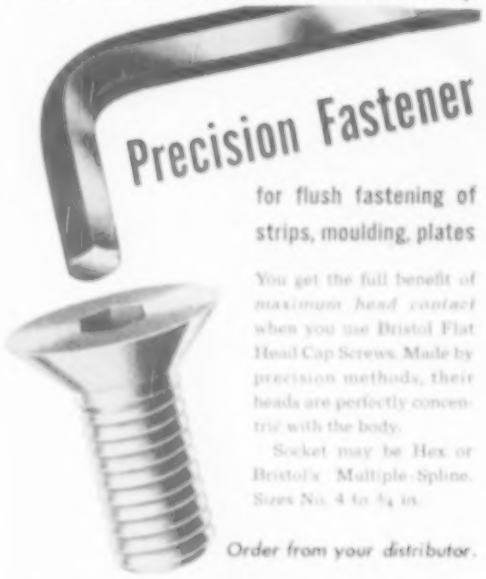
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ PREFIX—Identify by IEN-11830 if you write the maker ▼

WHEN you haul with Moto-Bug you have *full power* forward and reverse . . . for traveling 1½ to 4 m.p.h. in either direction . . . for backing up . . . for spotting. There's no pushing, no *pulling*. Operator takes it easy . . . rides on rear step . . . has positive steering wheel for effortless driving. Handy 33" width clears narrow doorways, crowded aisles . . . turns in own length. Simple, standard-make 4 h.p. gasoline engine takes full load up 20% ramps. Carries 10 cu. ft. in big-capacity hopper . . . 1200 lbs. on sturdy 4-ft. flat-bed platform. Fork-lift attachment available. You'll be surprised at the low initial cost . . . Moto-Bug quickly pays for itself with more production per man-hour. Get the facts from your Kwik-Mix distributor, or write us NOW.

KWIK-MIX COMPANY PORT WASHINGTON, WIS. (Koehring Subsidiary)
Also Mfrs. of: CONCRETE • PLASTER • BITUMINOUS MIXERS

▼ PREFIX—Identify by IEN-11831 if you write the maker ▼



Precision Fastener

for flush fastening of strips, moulding, plates

You get the full benefit of *maximum head contact* when you use Bristol Flat Head Cap Screws. Made by precision methods, their heads are perfectly concentric with the body.

Socket may be Hex or Bristol's Multiple-Spline. Sizes No. 4 to ¾ in.

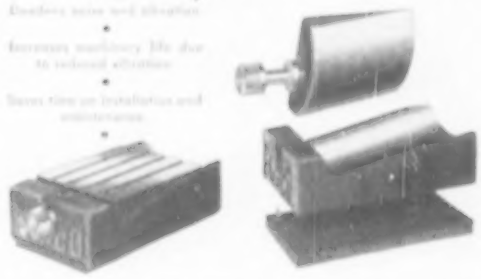
Order from your distributor.

BRISTOL'S SOCKET SCREWS

Free Socket Screw Bulletin. Address THE BRISTOL COMPANY, Mill Supply Division, 107 Bristol Road, Waterbury 20, Conn.

▼ PREFIX—Identify by IEN-11832 if you write the maker ▼

NEW *VIBRATION ABSORBING MACHINE LEVELING* *Empco JACK*



Tests have proven that "Controlled vibration means increased productivity and decreased maintenance costs." That is why the new Empco Jacks, featuring VI-SORB, the vibration absorbing mounting pads, save many times their initial cost. With the combined features of Empco's self-aligning, two-way pivoted Jacks and VI-SORB pads, set-up and maintenance costs are greatly reduced. For complete data and prices on the new Empco Jack with VI-SORB pads, write or wire today. Immediate delivery.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

▼ PREFIX—Identify by IEN-11833 if you write the maker ▼

Production Picks Up when Synthane is the Specified Material

Synthane plastic laminates are easily worked on standard machinery. Turned, drilled, punched, speed or milled parts may be inexpensively produced from Synthane. Synthane is light in weight, yet finished parts made from it have the hardness, toughness, density, corrosion, abrasion and impact fatigue resistance to give peak performance and long life. Automatic screw machines use Synthane rods and tubes are an excellent combination for low cost, high speed production of smaller parts.

For information about Synthane and some suggestions about what it can do for you, clip and mail the coupon today.

TECHNICAL PLASTICS
SHEETS • RODS • TUBES
FABRICATED PARTS
SYNTHANE
MOLDED LAMINATED
MOLDED-MACERATED

SYNTHANE CORPORATION
South River Road, Oaks, Pa.
Please send me a copy of the complete Synthane catalog.
Name _____
Firm _____
Address _____
City _____ State _____

▼ BREFITT—Identify by IEN - 11834 if you write the maker ▼

MUELLER BRASS CO.
PORT HURON, MICH.

▼ BREFITT—Identify by IEN - 11835 if you write the maker ▼

▼ BREFITT—Identify by IEN - 11836 if you write the maker ▼

▼ BREFITT—Identify by IEN - 11837 if you write the maker ▼

CLAMP . . Hand operated toggle for application in jigs and fixtures

Source: DETROIT STAMPING CO.
342 Midland Ave., Detroit 3, Mich.

No. 235-U is a new unit in the De-Sta-Co line of hand-operated toggle clamps. It develops 600 lbs. of holding pressure in closed position. The clamping arm moves to vertical position for work clearance when it is retracted. Bearing holes are reamed and pivot pins are made of stainless steel.

Dimensions are 10¼ in. in length by 2⅝ in. in height in closed position. Open height is 6¼ inches. The clamping stud is equipped with a pressure shoe and is adjustable for height and for longitudinal position along the arm. Weight is 1¼ pounds. A single unit lists at $3.85.

▼ BREFITT—Identify by IEN - 11838 if you write the maker ▼

HEATING . . Electric cable in 10 to 60 ft. fuse protected lengths

Source: SMITH-GATES CORP.
50 Gates Ave., Plainville, Conn.

60 foot length lists at $11, thermostat adds $4.65 or $6.75

Thermotape is a new thermoset assembly of electric heating cable in glass braid to form a thin length of heating element to wrap around a pipe, place in a gutter, or locate as required to provide distributed heat. The assembly includes connecting plug, socket, and free receptacle. Lengths range from 10 to 60 feet.

Rating is 20 watts for each 10 ft. length. Thermostats with rating at 900 and 1,000 watts and with control ranges at 20 to 80 deg. F. and 30 to 120 deg. F. are available. Operation is on 110-volt or standard power supply.

▼ BREFITT—Identify by IEN - 11839 if you write the maker ▼

PROTECTING . . Leather work glove with one piece palm and thumb design

Source: RICHMOND GLOVE CORP.
601 North D St., Richmond, Ind.

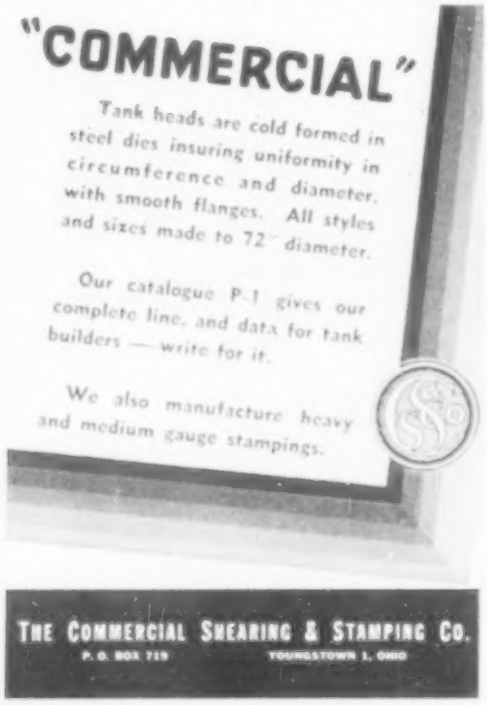
Dura Thumb is a new leather-faced fabric-backed work glove in which the face of the thumb and the palm are made of a single piece of dimensional, non-slip leather. The design eliminates any seam at the front. The first and fourth fingers also are part of the palm. Two types include the Wing Ring with a 4½ in. gauntlet and a super-II with a 2½ in. safety cuff.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

▼ BREFITT—Identify by IEN - 11840 if you write the maker ▼

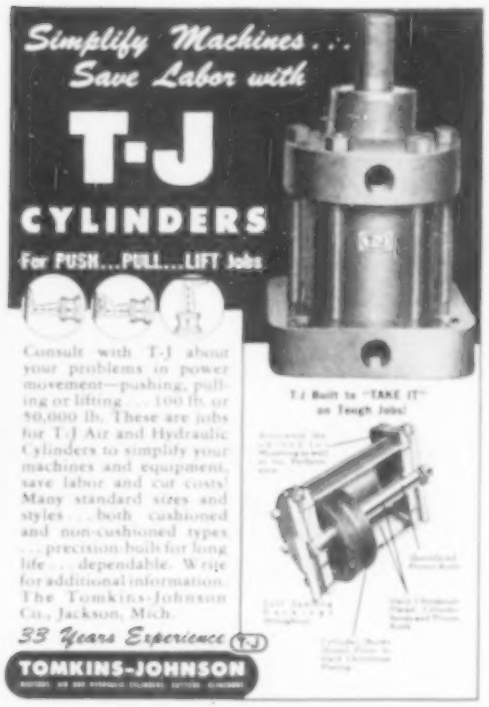
▼ BREFITT—Identify by IEN - 11841 if you write the maker ▼

▼ BREFITT—Identify by IEN - 11842 if you write the maker ▼

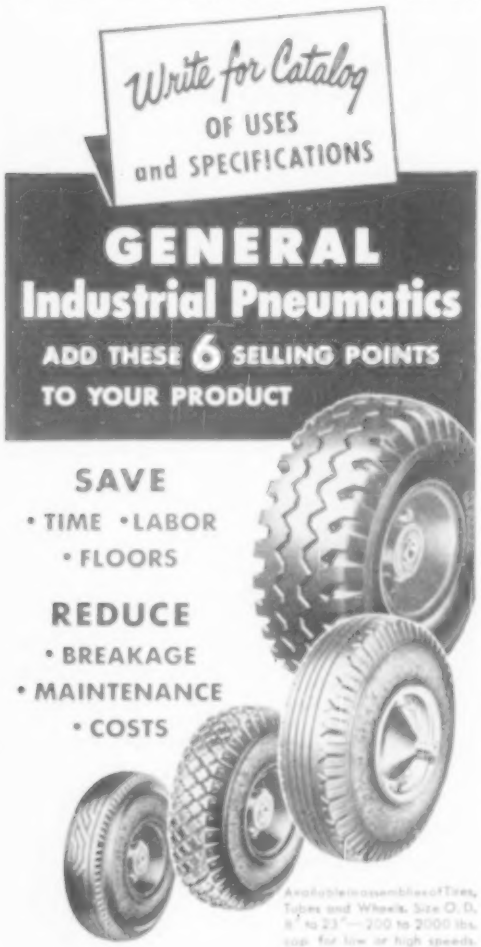


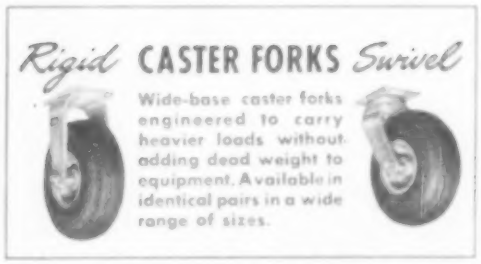
▼ BREFITT—Identify by IEN - 11843 if you write the maker ▼

FREE!!!—Identify by IEN-11844 if you write the maker



FREE!!!—Identify by IEN-11845 if you write the maker





FREE!!!—Identify by IEN-11847 if you write the maker

TESTING . . Induction instrument reads carbon content in ferrous metals

Source: FISHER SCIENTIFIC CO.
715-19 Forbes St., Pittsburgh 19, Pa.

A weighed sample of a ferrous metal is placed in a ceramic boat and is inserted into a quartz combustion tube in this portable induction Carbon Apparatus for determination of the carbon content. The instrument connects to a source for oxygen and to a 220-volt 60-cycle ac power line. It supports a silver induction coil to heat the sample to burning temperature in the atmosphere of oxygen fed into the tube. It will accommodate a full factor weight of 2.727 grams. Operation is automatic following the depressing of a start button, takes two minutes.

Heat is applied by the induction coil to attain a temperature of 3,000 deg. F. in a few seconds. Oxygen is started through the purification train to remove moisture and carbon dioxide after the sample has been preheated. The pure oxygen then passes into the combustion chamber. Resulting gases flow through a water and remaining tubes in the train to remove sulphur dioxide and moisture. Any carbon monoxide is converted to carbon dioxide by a platinum catalyst. When combustion is completed, the instrument switches to standby condition, ready for the next sample. The operator can watch the fusion period through a cobalt glass window on the combustion tube. The purification train is mounted at the front.

FREE!!!—Identify by IEN-11848 if you write the maker

MARKING . . Roll type machine prints on flat cartons, caps, bags

Source: ADOLPH GOTTSCHO INC.
60 Terminal Road, Hillside 5, N. J.

New design of the Gottscho marginal feed roll type machine can be equipped to mark radio dials, gauges, trade marks, control dies, special experimental jobs, parts or any flat surface, glass or wet. Equipped with the Pad [illegible] type, high speed, long wear of natural or synthetic rubber. It consists of a magazine feed, impinging pad, marking rubber, die or face, a cross-hatched anilox roll and the required ink supply mechanisms. The roll is under 20 psi. Capacity is to 7,200 pieces per hour.

Two machine sizes are known as Model U and Model D. The former will handle flat packages and package components from 2 to 7 in. in width, 8 to 14 in. in length or circular work from 3 to 7 in. in diameter. The latter has capacity between 8 and 14 in. in width, 10 and 22 in. in length, 10 and 14 in. in diameter. Work thickness in both is to ⅜ inch. The machine operates on 110 to 440-volt ac to specification. It is equipped with a variable-speed drive. Floor space measures 24 by 50 in. in occupied area.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 66

FREE!!!—Identify by IEN-11849 if you write the maker

FREE!!!—Identify by IEN-11850 if you write the maker

FREE!!!—Identify by IEN-11851 if you write the maker

NEW SAVINGS . . . with Kodagraph Autopositive Paper

Since 1947 the production of photographic intermediates has been easier, faster, more economical for The Heald Machine Company, Worcester, Mass. *Thanks to Kodagraph Autopositive Paper.*

With this revolutionary, low-cost intermediate material, positive photographic copies of original drawings are produced *directly*—without a negative step, without darkroom handling. Furthermore, *Heald* uses its direct process machine for the exposure operation, standard photographic solutions for development.

How "Autopositive" is used. A large percentage of the precision finishing machines manufactured by Heald are specially engineered to customer specifications. And, frequently, Heald is requested to draw special units and fixtures on the customer's own drafting paper. These originals are reproduced on "Autopositive" (for Heald's record) and turned over to the customer when the job is completed.

Thus, when repair parts are requested, or a duplicate order is entered, shop prints can be made promptly from the Autopositives. These new intermediates have dense photographic black lines on an evenly translucent base . . . will not smudge or smear in print production . . . turn out sharp, clean prints at uniform, practical machine speeds.

A NEW FREE BOOKLET gives you full facts on Kodagraph Autopositive Paper, the revolutionary photographic intermediate material which you, or your local blueprinter can process quickly, economically. *Write for it today.*

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak
TRADE-MARK

BREVITY—Identify by IEN - 11853 if you write the maker

NOW!
you can afford quality control

QUALITY-CONTROL INDICATOR

- first and only *instantaneous automatic quality-control*
- instantly pinpoints rejects on one or more production lines
- minimum investment and no additional personnel required

For detailed information, write for GEC 629 to Section 687-38, Apparatus Dept., General Electric Co., Schenectady 5, New York

GENERAL ELECTRIC

BREVITY—Identify by IEN - 11854 if you write the maker

UNIVERSAL
EXPANDED METAL **FLOOR TRUCKS**

MODEL 4-A
Length 40", width 30", height 20"

- **Greater Economy**
- **Greater Utility**

Literature Mailed Promptly Upon Request

MODEL 4-B
Length 40", width 30", height 48"

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters—swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

- Also other types of expanded metal containers to meet and guarantee to customer's specifications.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
SHIPPSBURG, INDIANA, U.S.A.

BREVITY—Identify by IEN - 11855 if you write the maker

MAINTENANCE CUT *Several Thousand Dollars Per Year* WITH KAOCAST

Photograph courtesy Ford Motor Company

A large automobile manufacturing firm found that high temperatures and severe operating conditions were playing havoc with the doors of their 15-ton electric furnaces. Run 16 hours a day, 5 days a week, these furnaces are poured every 2½ hours and are charged twice during each cycle. With a good grade of firebrick, furnace door linings lasted an average of only two or three days before replacements were necessary.

A trial installation of KAOCAST—the B&W high temperature Refractory Castable—was made. The KAOCAST doors stood up two to three weeks . . . *five to eight times longer than firebrick.* As a result, doors on all electric furnaces of this type are now lined with KAOCAST. *Savings in maintenance are running into thousands of dollars per year.*

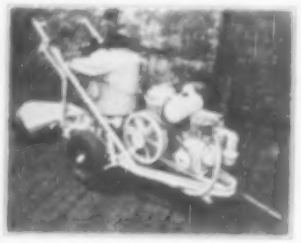
B&W Refractories Engineers will be glad to show you how KAOCAST will cut your furnace operating cost. Write or call today.

THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
GENERAL OFFICES:
85 LIBERTY ST., NEW YORK 6, N. Y.
WORKS: AUGUSTA, GA.

BREVITY—Identify by IEN - 11856 if you write the maker

MARKING . . Traffic line machine, engine drive, handles reflective paint

Source: WALD INDUSTRIES
Huntingdon St., Montgomery, Pa.



Model 12 is a new design of traffic-line marking machine known as the Reflecto-Liner. It will spray any type of traffic-line paint including the new reflective materials at a travel speed of 2 to 5 mph. Line width is adjustable between 2 and 6 in. by setting air blasts at the sides of the Nu-Matic spray gun. These blasts are composed of exhaust from the 6-hp. 3,600-rpm. Wisconsin gasoline engine and added air.

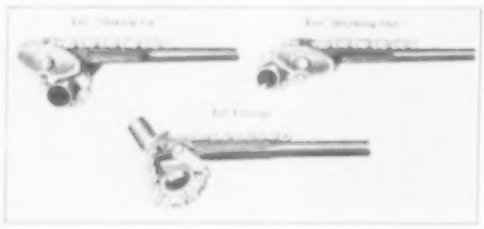
The engine drives a 12.5 cfm. air-cooled Quincy air compressor rated for delivery against 100-lb. pressure. It also is belt-connected to the travel drive.

The operator rides a wheel-mounted trailer at the rear where he controls action of the spray gun and travel direction. He starts and stops the travel movement by operating an air cylinder in connection with a belt tightener. The paint tank holds 12 gallons. It is fitted with a clamp cover on its 5¾-in. opening and has a built-in air-swirl agitator. A trailer is available on which the machine can ride.

BREVITY—Identify by IEN - 11857 if you write the maker

WRENCH . . Reversible chain type for pipe fittings, ¼ to 8 inches

Source: J. H. WILLIAMS & CO.
406-8 Vulcan St., Buffalo 7, N. Y.



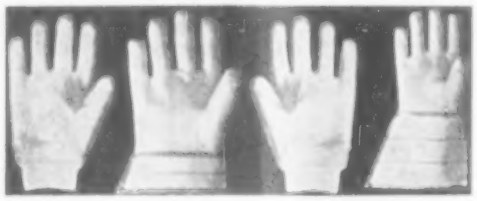
Side jaws lie on the two sides of the link chain in this new Vulcan chain wrench for pipe. Teeth face in both directions so the wrench can be applied and changed to tighten or remove a pipe without removing the chain. Also the side jaws are reversible on this assembly bolt so both ends can be used. Between the outer jaws is a third center jaw also secured by a bolt. It is used with the outer jaws removed to apply and remove pipe fittings.

Four sizes in the line measure 27 to 51 in. in length and weigh about 12 to 45 pounds. Breaking strength of the proof-tested chain is 9,800 to 15,700 pounds. Smallest will handle pipe from ¼ to 2½ inches. Largest has capacity to handle pipe ranging from between 1½ and 8 inches.

All Makers of Them And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All products are listed by subject in the Index, page 102

BREVITY—Identify by IEN - 11858 if you write the maker



TRY THEM *FREE*

SAVE 75% ON YOUR GLOVE COSTS

PLYGLOV

*Registered Trademark

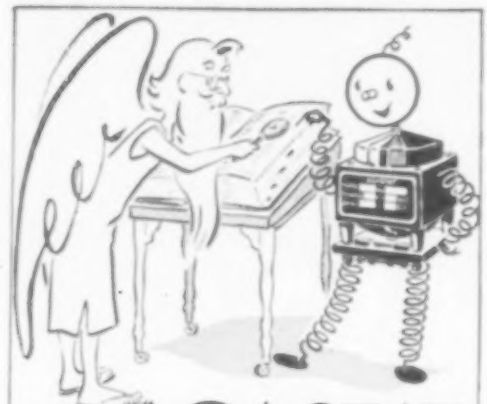
"PLYGLOVS, the amazing new plastic coated cotton work gloves, will outwear 10 pairs of cotton or 4 pairs of rubber gloves on comparable jobs. Moreover, they are proof against oils, chemicals, solvents, acids, or water. Their large size provides greater comfort and flexibility.

MAKE YOUR OWN TESTS

Write us for a FREE pair of "PLYGLOVS". Test them in your own plant, on your own job. See what we can give an unconditional guarantee good 600 hours of use, or up to 75 percent on your glove costs. Available in styles . . . shorty, regular, knit wrist, 2-inch cuff, palm coated to cuff, or 5-inch gauntlet.

THE MILBURN CO.
3212 E. Woodbridge, Detroit 7, Mich.

BREVITY—Identify by IEN - 11859 if you write the maker



get AGASTAT *for your* TIME DELAY RELAY

Look no farther. Agastat is a small, sturdy and efficient instrument for introducing time delay in electrical circuits (DC and AC). Literature—yours for the asking—without cost or obligation.

AGASTAT DIVISION
AMERICAN GAS ACCUMULATOR COMPANY
1027 Newark Avenue Elizabeth 3, New Jersey

BREVITY—Identify by IEN - 11860 if you write the maker

NEW TYPE CI

ADJUSTABLE THERMOSTAT

The new Type CI Adjustable Indicating Thermostat is a precise temperature control for gas, liquid, and metal-to-metal applications, such as ovens, hot plate presses, water baths, incubators, proofing cabinets and cold cabinets. It is most useful on units where periodic checks of temperature are required, advisable, or will prove time saving. The new Type CI is simply and rugedly built employing the highly sensitive response action of a solidly liquid filled bulb and bellows assembly to a snap-acting switch and indicating pointer. The thermostat is adjustable over its entire range by a knurled thumbscrew on the front of the case.

SPECIFICATIONS

Case 3¾ x 5¼ x 3¾". Wt. 3 lbs. Standard ranges 32°—[illegible]°F and 50°—[illegible]°F special ranges may be had between [illegible]°F and [illegible]°F. Standard differentials 5°F in adjustable [illegible] to [illegible]. Switch ratings 10 amp 125 v AC and 5 amp 250 v AC. Write for new Bulletin No. [illegible] which gives full details.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 11861 if you write the maker

STOP INEFFICIENT PRODUCTION

by using STICHT Tachometers, portable or stationary types

DON'T GUESS

We have in use by operators equipped the greatest assortment of tachometers in America. Write for condensed Tachometer Bulletin No. [illegible]

CHECK RPM AND RATE OF PRODUCTION

CONSTANTLY

HERMAN H. STICHT CO., INC.
27 PARK PLACE NEW YORK 7, N. Y.

▼ REPRINTS—Identify by IEN-11862 if you write the maker ▼

Oakite's New FREE Booklet

"Some good things to know about Metal Cleaning"

answers many questions that mean better production, more profit for you. Just look at the table of contents:

- Tank cleaning methods
- Machine cleaning methods
- Electrocleaning steel
- Electrocleaning nonferrous metals
- Pickling, deoxidizing, bright dipping
- Pre-paint treatment in machines, in tanks and by hand
- Paint-stripping
- Steam-detergent cleaning
- Sorrel cleaning
- Burnishing
- Better cleaning in hard-water areas
- Treating water in paint spray booths
- Rust prevention
- Machining and grinding

FREE For this 44-page illustrated booklet, write Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

▼ REPRINTS—Identify by IEN-11863 if you write the maker ▼

...GIVE *Years* OF UNFAILING SERVICE!

1. **CERAMIC CONSTRUCTION** provides perfect insulation, unaffected by aging. Contacts and mechanism are entirely enclosed and protected (except for Model 111).
2. **EXTREMELY COMPACT.** Let back-panel half-inch hole, perfectly insulated. Terminals are convenient for wiring. Back-of-panel mounting.
3. **SILVER-TO-SILVER CONTACTS.** For high electrical conductivity. Have low surface resistance, and eliminate contact membranes.
4. **SELF-CLEANING ROTOR CONTACT.** Slightly rounded, assuring perfect seating and producing slight rubbing motion with every operation.
5. **"DEAD" SWITCH SHAFT.** Completely insulated from the load by a high strength driving hub which will withstand a 2000 volt test.
6. **"SLOW-BREAK" MECHANISM.** Incorporating a positive non-arcing action. Provides "slow break, quick make" action particularly suited to electronic current. Minimizes arcing, extends contact life.

OHMITE MANUFACTURING CO.
4814 Flournoy St., Chicago 44, Ill.

WRITE on Company Letterhead for catalog and Engineering Manual No. 40

Be Right with **OHMITE**

RHEOSTATS • RESISTORS • TAP SWITCHES

▼ REPRINTS—Identify by IEN-11865 if you write the maker ▼

CLEANING . . Portable electric tool drives wire snake to clean a pipe line

Source: GENERAL WIRE SPRING CO.
961 Sarah St., Pittsburgh 3, Pa.

Wire snakes range using ¼ and ⅜ in. by 25 ft. in length are wound interlocking slots into the mineral centerpiece on this new tool and are threaded through a Jacobs hand chuck on the nose so they can be fed forward as the tool is operated to cut soil obstructions in a pipe line. Drive is by a universal 110-volt motor at the rear of the assembly.

A switch located in the pistol grip handle controls the action. Cutters supplied as standard include a 1¼ in. side cutting blade, an arrow-head drill, a boring gouge. The snakes are the company's Wirepowered design with spring wire wound on steel rope. The tool weighs 14 pounds.

▼ REPRINTS—Identify by IEN-11866 if you write the maker ▼

INSULATING . . Oil degasifier and pump for oil filled electric cable

Source: BOWSER INC.
1302 E. Creighton Ave., Fort Wayne 2, Ind.

Seven day device records the action

New equipment has been developed as a self-contained assembly to serve pipe-type oil-filled electric transmission cables. The equipment removes gas from the oil, drives out any moisture, holds the oil in storage where it cannot become contaminated, pumps it into the cable and maintains predetermined pressure between 225 and 240 pounds.

Pressure increase is released through relief valves. Pressure reduction is made up by the pumps of which there are two in dual arrangement. Either pump can take care of the cable on which it is installed. Failure in either case, high or low level in the reservoir, excessive pumping time, change in temperature, or fire, are all signaled for the attendant.

▼ REPRINTS—Identify by IEN-11867 if you write the maker ▼

GAGE . . Takes internal readings in overall range from 5/16 to 6 in.

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

Six sizes of this new No. 820 self-centering telescoping gage employ retracting pongers that act equally against spring pressure on the two sides of the central handle. The plunger position can be locked after it is set on an interior dimension by turning a knurled screw in the handle end. The plunger ends are rounded, hardened and ground.

All Makes of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

▼ REPRINTS—Identify by IEN-11868 if you write the maker ▼

For Faster Assemblies *use a*

"YANKEE"

Quick-Return Spiral Screw Driver

Quick-Return Style
Nos. 130A, 131A, 135
Standard Style
(without Quick-Return Spring)
Nos. 30A, 31A, 35

A push on the handle and the screw is off to a spinning start! Up with the arm, and the driver is ready for the next push. Constant spring pressure keeps the bit in the screw slot. This quick-return feature of the "Yankee" Spiral Screw Driver helps one hand do the work of two, easier and faster. *Ask your Industrial Supply Distributor about these and other "Yankee" Tools that put an extra push into every job.*

Write today for the "Yankee" Tool Book

"YANKEE" TOOLS — STANLEY — THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

▼ REPRINTS—Identify by IEN-11869 if you write the maker ▼

Victor Hack Saw Blades are precision made from start to finish. Take toothing. Victor Blade Teeth are always perfectly uniform with no uneven teeth. That's because they're cut by a special machine using scores of *individually* ground toothing tools that are always accurately set. No other manufacturer cuts teeth this way.

There's a Victor Distributor near you, ready to fill your needs promptly. He's also ready to give you ABSOLUTELY FREE copies of the Victor Wall Chart and the Victor Metal Cutting Book. Both are jammed with valuable information. Get yours today.

With *Victor Steelrite Metal Marking Crayons*, you can mark hot, cold, damp or grimy metal easily. Withstands pickling and will not affect enamel application.

VICTOR SAW WORKS, INC. Middletown, N. Y., U.S.A.

MAKERS OF HAND & POWER HACK SAW BLADES, FRAMES & BAND SAW BLADES

▼ REPRINTS—Identify by IEN-11870 if you write the maker ▼

▼ REPRINTS—Identify by IEN-11871 if you write the maker ▼

NEW...

300 G.P.M. COMPACT

For Petroleum, Process and General Industries

ROPER 3600 HRRV No. 7 PUMP

Highly efficient venturi suction and discharge principle for smooth flow, deep packing box with lantern ring for effective sealing and long packing life. Case can be lined for steam heated operation at small extra cost. Ideal for thick viscous liquids. Driven by gasoline engine, geared head motor or power take-off for wide range of applications.

Capacity, 300 G.P.M.

Send for Literature.

ROPER *Rotary Pumps*

GEO. D. ROPER CORP.
212 Blackhawk Park Avenue
ROCKFORD, ILLINOIS

▼ BREFITS—Identify by IEN - 11872 if you write the maker ▼

Like a *FAST* V-8 It can really *Pick-up*

Something NEW in a Lifting Magnet

Here is a money-making scrap magnet. Picks 'em up and lays 'em down. Hour after hour, week after week, year after year. Endurance and strength second to none.

FEATURES LIGHT WEIGHT AND WELDED CONSTRUCTION and many more advantages worth investigating.

HOW TO GET LIFT THAT LASTS

SEND FOR CATALOG B-1401-A — the whole story on features, capacities, ratings, dimensions — what makes this magnet different, improvements that only Dings — the pioneer magnet builder — offers. Write today.

DINGS MAGNETIC SEPARATOR CO.
4755 West Electric Ave. • Milwaukee 46, Wisconsin

▼ BREFITS—Identify by IEN - 11873 if you write the maker ▼

BEST FOR EVERY FOLDING CHAIR PURPOSE!

- DURABLE—strong steel frame, reinforced
- SAFE—no tipping, pinching, snagging hazards
- COMFORTABLE—extra wide, extra deep seats and backs
- CONVENIENT—fold quickly, quickly, compactly
- RUBBER SHOES—long life, replaceable
- THREE SEAT STYLES—formed steel, formed plywood, imitation leather upholstered

OVER EIGHT MILLION IN USE!

WRITE FOR DESCRIPTIONS AND PRICES

American Seating Company
Grand Rapids 2, Michigan
Branch Offices and Distributors in Principal Cities

▼ BREFITS—Identify by IEN - 11874 if you write the maker ▼

You Might REVOLUTIONIZE your business tool

The cost of distributing millions of magazines was cut 15% last year . . . caused a revolution in the industry. A UNITABLE did the trick and paid for itself in nine weeks. This up-to-the-minute belt conveyor could be the answer to your distribution, assembly, or handling problem.

For the whole story, mail the COUPON.

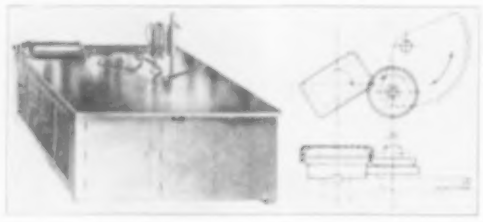
CONVEYOR SPECIALTY COMPANY INC.
35 Newport Ave.
North Quincy 71, Mass.

Please mail me the 1950 UNITABLE Bulletin
Name
Company
Address

▼ BREFITS—Identify by IEN - 11875 if you write the maker ▼

SHEARING . . Edge trimming machine to square drawn shells and stampings

Source: DAYTON ROGERS MFG. CO.
2822-26 13th Ave., S., Minneapolis 7, Minn.



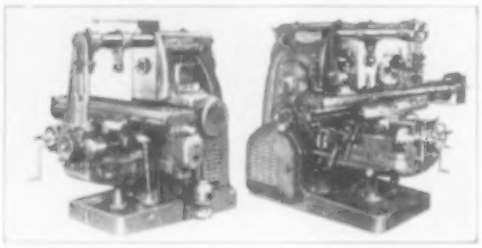
The uneven edge produced in a forming or drawing operation is removed from a shell or stamping by this recently improved Model B machine. It has capacity for work to 14 gage in thickness and to 12 in. in greatest cross diameter or diameter. It will handle round, rectangular or irregular shape with corner radii minimum at 1/4 inch. Drive is by a base-mounted 3-hp. motor with variable-speed transmission for work spindle speed at 5 to 42 rpm. Installation requires connection to a shop line carrying 20 to 80 lb. air pressure.

A mandrel to fit inside a given work piece and carry a cutting edge assembles on the top of the vertical work spindle. The work is inverted over it and is held down by a vertical air cylinder on an overarm. The circular free-rotating external cutter is mounted on a quadrant that is operated by a second air cylinder. This cylinder moves the cutter into the work, holds it there while the work spindle rotates to complete the cut around the work and then retracts the cutter. The flexible air backing permits the cutter to follow an irregular work contour. The mandrel positions the work vertically for correct cut location. Weight is 2,000 pounds.

▼ BREFITS—Identify by IEN - 11876 if you write the maker ▼

MILLING . . Knee type machines, plain and universal, made in five sizes

Source: KEARNEY & TRECKER CORP.
6782-86 W. National Ave., Milwaukee 14, Wis.



No. 3 plain with 15-hp. drive, to the left, and No. 4 universal with 25-hp. drive, to the right, are two of five new sizes in the company's new Model-CK line of plain and universal machines. Smallest No. 2 with 10-hp. drive mounts a table with 50 by 13½ in. of work surface. Largest No. 6 measures 108 by 18 inches. Speed range on No. 2 and 3 is 15 to 1,500 rpm. The others range from 18 to 1,500 rpm. Feed range provides 32 changes between ¼ and 60 ipm. with separate ¾ or 3-hp. feed and rapid traverse motors.

Bulletins CK-10, 6 pages, CK-15, 6 pages, and Temporary Data Sheets CK-23 provide illustrated detail information.

All Makers of These And All Other Products Are Listed In THOMAS REGISTER . . Descriptions . . Ratings . . See Page 50

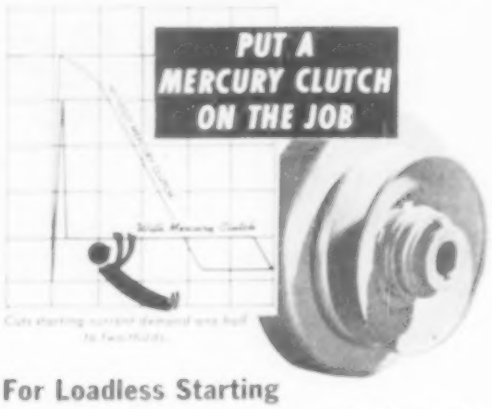
▼ BREFITS—Identify by IEN - 11877 if you write the maker ▼

You can read on fast and accurately with the Columbia Tong Test Ammeter by merely clamping the tong around the electrical conductor. Tong Test is the only instrument of its type that can measure both AC and DC. Cannot burn out for it has no windings. Safe, convenient and light in weight. Interchangeable scale ranges up to [illegible] amperes. Five types to accommodate cables up to [illegible] bars up to [illegible]. Voltage readings, too, with the [illegible] Attachment.

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

▼ BREFITS—Identify by IEN - 11878 if you write the maker ▼



For Loadless Starting

An electric motor equipped with a MERCURY CLUTCH reaches full speeds before any load is applied, utilizing the full power of the motor to start the load. If you build or operate machines or equipment powered by an electric motor, protect the motor and assure easy starting and smooth pick-up by fitting each motor with a MERCURY CLUTCH. Send for new Mercury Catalog 216-C2.

Mercury Clutch Division
ASP AUTOMATIC STEEL PRODUCTS INC. CANTON 6 · OHIO

▼ BREFITS—Identify by IEN - 11879 if you write the maker ▼

A complete, comprehensive handbook on cold headed nuts, rivets, screws and other special fasteners. Check on ways to improve your assembly cost wise, appearance wise and from a standpoint of maximum effectiveness at minimum cost.

One hundred years of experience are at your service. Write for price quotations or for suggestions on the redesigning of your present assembly.

JOHN HASSALL, INC.
132 Clay Street, Brooklyn 22, New York

▼ BREFITS—Identify by IEN - 11880 if you write the maker ▼

TEMPERATURE CONTROLLER

Automatically throttles gas supply to maintain desired temperature. Five ranges between 0 and 1000 deg. F. on supply pressures to one pound.

One feature of this No. 40 control is that the valve is moved only just enough to feed the gas needed by an oven, furnace, heating furnace or washing equipment to maintain accurate control. Changes in load demand are anticipated through the temperature-sensitive bulb. There is no overshooting or undershooting around the main set point which you set on the operating dial.

This unit is also complete for high as well as low pressure gas controls. Also No. 40 is made in four sizes for pipe from ¼ to 1 inch, and five load ranges, 0 to 130, 20 to 300, 100 to 600, 300 to 850 and 500 to 1000 deg. F. Standard sun power complete is 5.0, open temperature sensitive, operating and safety lockup pressure. Low pressure range, 0 to 40, or 0 to 10 inches and recommend details.

BULLETINS 20A AND 250 PROVIDE DETAILS. SHOW BULB CONSTRUCTION FOR SPECIAL INSTALLATIONS. BULLETIN 240 SHOWS COMPLETE LINE.

THE PARTLOW CORPORATION
4 CAMPION ROAD NEW HARTFORD, N. Y.

▼ FREE!!!—Identify by IEN-11881 if you write the maker ▼

WAB Controls are a proven means of governing a wide variety of functions, from a simple "push-pull" operation to precise positioning. Successfully serving on production machines, hoists, cranes, excavating equipment, oil drilling rigs, boats, etc. Illustrations show only a few of the many devices available. Ask for Bulletin 9481-1 for full details.

Westinghouse Air Brake Co.

Industrial Division: Wilmerding, Pa.

DISTRIBUTORS THROUGHOUT THE UNITED STATES
CONSULT YOUR CLASSIFIED DIRECTORY

▼ FREE!!!—Identify by IEN-11882 if you write the maker ▼

Right on the record!

accurate
readable

WESTON

ALL-METAL THERMOMETER

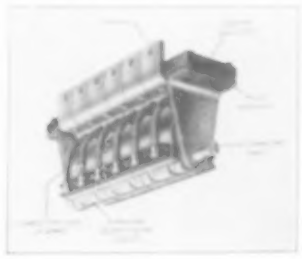
An accurate temperature record requires more than just instrument accuracy. It requires instrument readability as well. That's why WESTON Thermometers are so widely used for critical applications. A quick glance at their bold, open scales gives you the exact reading ... no question or doubt about it. Combined with the long-time accuracy and the ruggedness for which they are famous, this feature of readability can be worth dollars to you. Why not send for complete literature today. Weston Electrical Instrument Corporation, 658 Frelinghuysen Ave., Newark 5, New Jersey. Manufacturers of Weston and Tagliabue Instruments.

WESTON *Instruments*

▼ FREE!!!—Identify by IEN-11884 if you write the maker ▼

SWITCH . . Rotating blade design cuts out individual electrolytic tanks

Source: RAILWAY & INDUSTRIAL ENGINEERING CO.
Kerr St., Greensburg, Pa.



Type 111 is a non-short-circuiting switch designed for the motor circuits in electrolytic installations wherein individual tanks can be shorted out for inspection or repair without shutting the whole installation down. The switch shown in the illustration is a single unit made up of three 2,500-amp. assemblies of two-finger pairs of spring-backed silver-faced copper jaws.

The jaws are assembled side by side for a desired unit rating, are mounted on a Masonite base and extend upward to terminal ends. Centrally located between them is a shaft carrying copper silver-faced rotating contacts. The shaft can be extended as required to mount the necessary number of switches for a given cell. A 3-ft. hand-operated lever on the shaft completes the assembly.

▼ FREE!!!—Identify by IEN-11885 if you write the maker ▼

SHIM STOCK . . Stainless steel in .001 to .031 by 6 by 50 in. coils

Source: PRECISION STEEL WAREHOUSE INC.
4405 W. Kinzie St., Chicago 44, Ill.

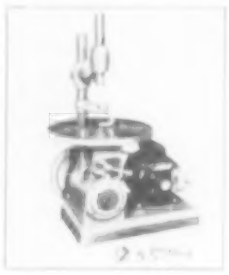
List price is
$5.75 to $9.75

Spring Temper type 301 with mirror finish designates stainless steel coil available in the form of shim stock. Individual pieces measure 6 by 50 in. and are supplied in polyethylene-wrapped cartons to keep them free from dust.

▼ FREE!!!—Identify by IEN-11886 if you write the maker ▼

FILING . . Motor driven machine reciprocates file, saw blade, stone

Source: ILLINOIS TOOL WORKS
2500 N. Keeler Ave., Chicago 39, Ill.



New design of the company's file-filing machine mounts a 12-in. circular table with provision to tilt through 20 deg. to the right or left. It reciprocates a file, saw blade or stone through 1½ in. at 375 or 500 strokes per minute. Operation is on 110-volt 60-cycle ac. for the 1/2-hp. motor. Principal application is in finishing intricate dies. The machine can be mounted on a bench or a cabinet base can be specified.

The chuck capacity is for shanks to ⅝ inch. Jaw chuck capacity is to 5½ in. in width.

All Makers of Items And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

▼ FREE!!!—Identify by IEN-11887 if you write the maker ▼

Chicago "Safety Plus" Socket Screws make your product better 4 ways

* THEY'RE STRONGER . . . They factory produced SAFETY PLUS screws give a stronger tighter "hold".
* THEY GO FARTHER . . . Because they're stronger they Cutter tighter with fewer screws, give more acceptance with less weight.
* MORE ACCURATE . . . They're consistently more accurate . . . hexagon "head-shaped" machined from elements, more to assure the first time.
* THEY COST LESS . . . Tighter hold . . . that means screws, plus is easier to assure LOWER COSTS in machine as well as production time.

These are Chicago "Safety Plus" products designed to give you a tighter, lower cost fastening for ANY heavy duty purpose.

Find the right one and you can't go wrong.

Socket Head Cap Screws ■ Socket Set Screws ■ Shoulder Bolts ■ Square Head Dog Point Set Screws ■ Socket Pipe Plugs ■ Keys ■ Hexagon Head Cap Screws, Steel and Brass ■ Square Head and Headless Cup Point Set Screws ■ Fillister and Flat Head Cap Screws ■ Taper Pins ■ Milled Studs ■ Semi-Finished Hexagon Nuts, Steel and Brass ■ Hexagon Embedded Nuts.

Best recommendation: Industrial Supply Distributors everywhere carry complete stocks of CHICAGO "Safety Plus" Products. To speed industry, insist on the one number one.

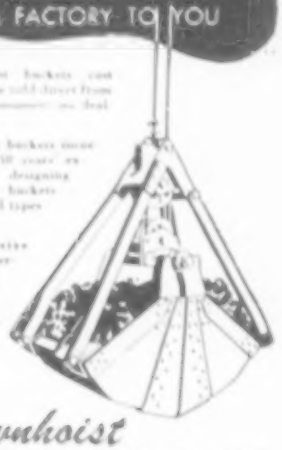
The CHICAGO SCREW COMPANY
2525 WASHINGTON BLVD. • BELLWOOD, ILL.
Established 1872

▼ FREE!!!—Identify by IEN-11888 if you write the maker ▼

Buy a Better Bucket FOR LESS MONEY *Buy Brownhoist*

DIRECT FROM FACTORY TO YOU

* Brownhoist buckets cost less—they are sold direct from factory to consumer—no dealer profits.
* Brownhoist buckets incorporate over 50 years' experience in designing and building buckets for handling all types of materials.
* Standard size reversers, power-wheel and link type Brownhoist buckets are available for immediate shipment.



Brownhoist

Write for illustrated catalog of Brownhoist Buckets
INDUSTRIAL BROWNHOIST CORPORATION
139 Washington Ave., Bay City, Michigan

▼ FREE!!!—Identify by IEN-11889 if you write the maker ▼

New plant at Willimantic, Conn. one of the most modern operations in the screw industry

. . . as production steps up in NEW WILLIMANTIC PLANT

American's pipelines are being pumped full of ample supplies of all types of Phillips and slotted fasteners. Industrial supply distributors and hardware jobbers everywhere are set to serve you now.

For America's new high-production plant in Willimantic is geared up to meet all demands promptly and efficiently. And this production is augmented by the American plant at Norristown, while distribution is kept on a "delivery now" basis by warehouse stocks in Norristown and Chicago.

AMERICAN SCREW COMPANY
Plants at Willimantic, Conn. and Norristown, Pa.

AMERICAN SCREWS

▼ FREE!!!—Identify by IEN-11890 if you write the maker ▼

Bond *built-for-the-job* CASTERS...

right for every job!

You pattern that rattle performance record of dependable, efficient rug-rolling Bond Casters. Bonds are built-for-the-job—and that means trouble-free performance handling. Write for your copy of Bond Catalog K—it contains complete descriptions of all Bond Casters.

BOND FOUNDRY & MACHINE COMPANY
304 Penn St.
Manheim, Pa.

▼ BREVITY—Identify by IEN-11891 if you write the maker ▼

● The instantaneous and effortless setting, and guaranteed positive locking of the amazing "Grip-Master" Screwdriver Vise add up to new savings on hundreds of drill press and production line operations. "Grip-Master" also makes an ideal base-structure for jigs and fixtures. Hammer blows will not budge its tension grip obtained by an effortless press on the locking lever. Built-in parallels level work instantly. Write today for full information and prices on the "Grip-Master" line or ask your Dealer for a demonstration.

NATIONAL MACHINE TOOL COMPANY
DEPT. 170-M RACINE, WISCONSIN

▼ BREVITY—Identify by IEN-11892 if you write the maker ▼

HANSEN

QUICK CONNECTIVE
HIGH PRESSURE
TWO-WAY SHUT-OFF
COUPLINGS

Both ends of line are positively sealed when you disconnect the Hansen High-Pressure Two-Way Shut-Off Coupling. Economical, nearly pull back shows and your plug into socket. Identical outside trim valves in plug and socket permit free flow of gas or liquid. Instantaneously pull back shows coupling disconnects and valves automatically and instantly seal both ends of line.

Where fixed lines may be damaged by sudden strain, coupling can be mounted in bracket to disconnect automatically, leaving fixed lines free, positively sealed, and undamaged.

Series HP8000

Also straight through and one-way shut off couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
8021 WEST 190th STREET • CLEVELAND 11, OHIO

▼ BREVITY—Identify by IEN-11893 if you write the maker ▼

S.S.WHITE *Elastoplastic*
PLUGS and CAPS

Slipped into place over the ends of pipes, tubing, hose, rings and caps protect the ends and keep out dirt and moisture.

Made of flexible Vinylite tastic. They are easy to seal tight after high pressure tests and are easily applied and stay put. For isolated

WRITE FOR BULLETIN P-4704.

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO.
NEW YORK 16, N. Y.

▼ BREVITY—Identify by IEN-11894 if you write the maker ▼

LUBRICATING . . Portable equipment delivers pressure grease through gun

Source: LINCOLN ENGINEERING CO.
5732 Natural Bridge Ave., St. Louis 20, Mo.

Model 219 Lubegun is a new wheel-mounted assembly of pump and ½ hp universal 110-volt motor, with inherent cooling. Fitted with a hand-operated grease, 7 ft. length of ¼ in. lubricant hose, a valve-equipped gun and a 12 ft. electric extension cord and plug.

The pump is a positive-displacement unit rating 7 oz. of No. 2 viscous grease per min at 70 deg. F. Maximum pressure is 5000 pounds. Delivery starts at full pressure on opening the valve, shuts off when the valve is closed. Overall dimensions are about 34 by 15 by 54 inches.

▼ BREVITY—Identify by IEN-11895 if you write the maker ▼

PLASTIC . . Phenolic casting liquid to make fixtures, molds, dies, patterns

Source: REZOLIN INC.
4823-27 W. Jefferson Blvd., Los Angeles 16, Calif.

Ask for Bulletin
"8000 Tool Plastic"

Tool Plastic 8000 is a non-liquid casting resin that is characterized by its ability to hold size without shrinking. It hardens after pouring for overnight heating at 100 deg. F. It can be hardened without heat for emergency work by adding a "Quick Set" accelerator paste. Shrinkage from mold dimensions is negligible. Hardness is 110 on the Rockwell H scale with a ⅛ in. ball. Compressive strength is 11,000 lb. per sq. in. with tensile strength at 5,000 lb. per square inch. The finished work is adhesive and insoluble. Dielectric constant at 60 cycles is 17.15.

The company has prepared a 32-page manual of materials and techniques. Jobs are the manufacture of patterns, molds, on model preparation, core construction, base design, on mixing prior to pouring, on pouring, curing, taking, finishing, on the use of inserts, repairing, alterations, machining.

▼ BREVITY—Identify by IEN-11896 if you write the maker ▼

PROTECTING . . Plastic goggle one piece, one ounce, for general use

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

No. 429 clear and No. 480 green are two new one-piece impact resistant non-inflammable goggles for general use in conjunction with operations such as scabbing, chipping, grinding, sandblasting, steel cutting. The goggle makes four point contact with the user's face to resist sliders. It provides wide-angle vision. It fits over prescription glasses. List price is $1.20 each in lots of 150 or more.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

▼ BREVITY—Identify by IEN-11897 if you write the maker ▼

When fed into your steam system, CORAVOL (1) prevents corrosion in steam and condensate lines, (2) steam traps clogging with deposits resulting from pre-steam corrosion. Thus, CORAVOL protects lines, increases the effectiveness of heat transfer surfaces, increases original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete treatment for steam systems which includes special formulas for treatment of boiler feed water . . . for water supply . . . anti-foaming boiler compounds . . . cooling and condensate water . . . equal water conditioner . . . pre-treatment . . . algae control . . . fuel oil supply . . . soot removal.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Mo. for complete FREE data on the CORAVOL process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

▼ BREVITY—Identify by IEN-11898 if you write the maker ▼

PROTECTION . . . against Wood Decay and Termites with WOLMANIZED* Lumber

Before building, remodeling or reconditioning your plant, we believe you will find this new booklet valuable. It tells you exactly what WOLMANIZED PRESSURE-TREATED LUMBER is. It explains how it protects against damage to wood caused by rot and termites. It gives you a good idea of the many applications for this remarkable cost-saving lumber—and how it saves time and money for you.

Investigations by qualified technologists prove that WOLMANIZED PRESSURE-TREATED LUMBER lasts three to five times longer than untreated wood. And, only WOLMANIZED Lumber provides all these extra advantages—clean, odorless, paintable, non-corrosive, non-leaching, glueable, and lower fire hazard.

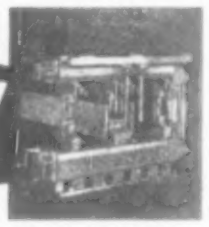
For complete facts on WOLMANIZED LUMBER, write for free informative booklet.

*Reg. U.S. Pat. Off.

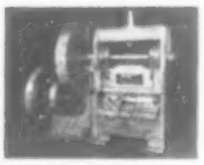
Source: AMERICAN LUMBER & TREATING COMPANY
General Offices: 1641 McCormick Bldg. • Chicago 4, Illinois
Offices in: Baltimore, Boston, Jacksonville, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Washington, D. C.

▼ BREVITY—Identify by IEN-11899 if you write the maker ▼

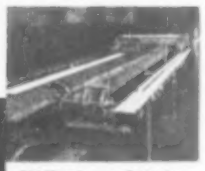
BEATTY



METAL WORKING TOOLS——
are the product of broad experiences and skill aimed at solving a specific problem. If you have such a problem, let a Beatty engineer work with you on it. Our broad experience in metal working production qualifies us to handle the most difficult assignment.



BEATTY Adjustable Tools punch sets of beams, channels, legs of angles, plates.



BEATTY Guillotine Shear for clean, sliver shearing without changing tools.

BEATTY Spacing Table for plate, flange and web punching without roll adjustment.

BEATTY MACHINE AND MFG. COMPANY
HAMMOND, INDIANA

▼ BREVITY—Identify by IEN-11900 if you write the maker ▼

NEW! Volatile Solvent

CARBON MET

A HALOGENATED AROMATIC HYDROCABRON

A specific replacement for Carbon Tetrachloride

One and one metal dry cleaning solvent and degreaser in ready-to-use "Handy Kit" containing Patented dip and drain basket.*

(1 Pint 20 oz.)

- Quick Cutting solvent against stubborn dirt and grease.
- Non-Explosive and relatively non-toxic.
- Non-Corrosive to metals. • Fast, clean evaporation.
- Non-ionic . . . ideal for degreasing and cleaning electrical parts.

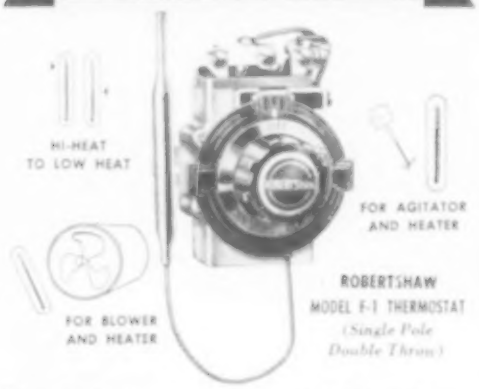
MUCH FASTER CUTTING THAN "CARBON TET" . . . CAUSES NO RUSTING . . . LEAVES NO FILM

*Also economical 55 gal. size drum.

CORRAN CORP.
Mfg. Chemists
LAWRENCE, MASS.
122 South Canal Street

▼ BRIEFITS—Identify by IEN-11901 if you write the maker ▼

A 2 CIRCUIT THERMOSTAT FOR A THOUSAND USES —



When two heating elements are used, high heat element is automatically cut in when thermostat calls for heat. When set temperature is reached, main contacts are automatically broken and low, or holding temperature element is cut in to function until drop in temperature again calls for heat. *Write for catalog.*

In Home and Industry EVERYTHING'S UNDER CONTROL

Robertshaw THERMOSTAT DIVISION ROBERTSHAW-FULTON CONTROLS COMPANY YOUNGWOOD, PENNSYLVANIA

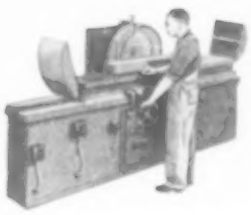
▼ BRIEFITS—Identify by IEN-11902 if you write the maker ▼

BEST BET TO BOOST OUTPUT

General Electric adjustable-speed drives can increase the output of your machines—make them more accurate, more versatile

You can now buy General Electric drives precision-engineered for your machines, at mass production prices. General Electric has brought them to a new high in versatility and power to work production miracles like those shown here:

STEPPED UP PUNCHING 968%
A feat performed on a large punch press, hiking output from 75 to 900 parts per minute.



INCREASED GRINDING PRODUCTION 40%
This gain was achieved on a Buffalo company's face and knife grinder with an adjustable-speed drive.

TO UNCOVER OPPORTUNITIES for adjustable speed in your plant, General Electric offers: First, the assistance of specially trained sales engineers. Pick up your phone now and call your nearest G-E field office. Second, a comprehensive, carefully illustrated book on the *whole* subject of adjustable speed. Write for Bulletin GEA-5334 on your business letterhead. *Apparatus Department, Section 751-IE, General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

▼ BRIEFITS—Identify by IEN-11904 if you write the maker ▼

PACKAGING . . Automatic machine weighs, delivers small pieces to boxes

Source: TECHNOMATIC INC.
P. O. Box 1140-A, Bridgeport, Conn.

Small pieces—such as hook-style screws, tacks—are loaded into a hopper in this new machine. They are fed from the hopper to a weighing scale by a vibrating tray. The scale accumulates them in predetermined quantity in terms of weight and then delivers them in weighed batches to boxes on the table.

The filled boxes are closed as the table is indexed until they reach a discharge point. Here they are ejected to a delivery chute for storage or shipping. Operation is accurate within 1 per cent of set count. Speed is adjustable between 25 and 35 filled boxes per minute. Floor space measures 3 by 4 feet.

▼ BRIEFITS—Identify by IEN-11905 if you write the maker ▼

WELDING . . Tungsten electrodes for use in gas shielded arc equipment

Source: SYLVANIA ELECTRIC PRODUCTS INC.
50 Industrial St., Towanda, Pa.

Puretung is the trade name

New line of tungsten electrodes for gas-shielded arc welding includes diameters from 040 to 250 in. and lengths from 3 to 18 in. long. They are supplied with chemically cleaned and etched finish or are centerless ground for collet feed on automatic equipment. Other finish can be specified.

▼ BRIEFITS—Identify by IEN-11906 if you write the maker ▼

GAGE . . Multiple station assembly checks critical dimensions on a shaft

Source: PRATT & WHITNEY DIVISION
49 Charter Oak Blvd., West Hartford 1, Conn.

Taper, throw, concentricity and selected dimensions are checked and readings appear on six dials in connection with limit hands when the operator of this new Electromint gage assembly places a work piece and presses a button. The work is moved into gaging position, is rotated by a motor and is ejected when the button is released. As many as 600 pieces can be inspected in an hour. The assembly is representative of multiple gaging equipment the company can supply for specified work in production manufacture.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BRIEFITS—Identify by IEN-11907 if you write the maker ▼

Drill Hardened Steels without Annealing —

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work hardening steels and high carbon-high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—
With "HARDSTEEL"

BLACK DRILL COMPANY
Division Black Industries
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of—
BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

▼ BRIEFITS—Identify by IEN-11908 if you write the maker ▼

▼ BRIEFITS—Identify by IEN-11909 if you write the maker ▼

BLENDING AND SORTING WITH VACUUM

This Spencer Vacuum Producer is located between two huge storage tanks on the roof of a large chemical plant. Dried plastic granules are picked up from the trays with a Spencer "Gulper" tool as they come from the ovens. One tray containing 10 pounds of material is emptied in one minute. The plastic is then conveyed by vacuum to the roof, 35 feet above and is separated by the Spencer Centrifugal Separator and then dropped down over vibrating screens.

356-J

150 USES FOR VACUUM . . . ASK FOR BULLETIN
THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER

▼ BRIEFITS—Identify by IEN-11910 if you write the maker ▼

for DUST SUPPRESSION where headroom is limited

Whiting Type "CH" Hydro-Clone is designed to handle heavy loadings of dust in locations with extremely low headroom and limited space. It absorbs fumes and gases.

Suppresses Dust with Water

Hydro-Clone Equipment suppresses dust with water, reducing it to harmless, easily disposable sludge, removed automatically with a conveyor. There are no moving parts in the air stream — no cloth bags or screens. Write for Bulletin FY-165 for full information of Type "CH" Hydro-Clone.

WHITING CORPORATION
15629 Lathrop Ave.
Harvey, Illinois

FREE
New booklet of Practical Information on Dust Collection. Ask for Bulletin No. FY-142

▼ FREE!!!—Details by IEN-11911 if you write the maker ▼

another FIRST in McGILL precision bearings

a NEW PRINCIPLE in roller bearing design

The NEW McGILL GUIDEROL roller bearing

The Bearing with the Self-Aligning Rollers—a simplified roller bearing construction that automatically corrects roller skewing — without space-wasting cages! Perfect roller alignment with resulting superior performance is maintained by this new principle of guided rolling. Even with reduced internal radial looseness a GUIDEROL bearing overcomes any tendency to load under biased misalignment. Produced in needle and cylindrical type roller bearings.

Write for complete catalog of the new GUIDEROL Bearing. Address McGill Manufacturing Co., Inc., Bearing Division, 200 N. Valentine St., Valparaiso, Indiana.

McGILL precision bearings

▼ FREE!!!—Details by IEN-11912 if you write the maker ▼

"LIKE WATER off a DUCK'S BACK"

Moisture cannot penetrate the resilient rubber body of a MINES electrical connector — even mating pins and sockets are fully protected when connected. Sealing action between plugs and sockets is automatically completed each time connections are made — through patented face construction of connectors.

Molded as integral Neoprene rubber cords and permanently vulcanized to their cables — MINES plugs and inserts can't crack or shatter and are highly resistant to the deteriorating effects of grime, fluids, humidity and temperature changes. All the outstanding advantages of "wear-resistant" rubber are engineered to peak performance in MINES connectors.

Write for Descriptive Bulletins

MINES EQUIPMENT Division
JOY MANUFACTURING COMPANY
HENRY W. OLIVER BLDG., PITTSBURGH 22, PENNA.

▼ FREE!!!—Details by IEN-11913 if you write the maker ▼

Corrosion Stops HERE

When You Specify SUPERIOR Fine Small Tubing

The photomicrograph above shows one of many reasons why Superior tubing is a better buy when rust problem or corrosion. The finish of a Superior tube is always bright, clean, free from corrosion-inviting pits—inside and out.

We cold draw small metal tubing in many analyses to resist many corrosive media and conditions. Stainless steels, nickel, nickel alloys, and brass/bronze/copper are some of the metals endorsed month in, month out. "Custom make" small tubing to your specifications. Every Superior tube is accurately dimensioned to close tolerances, properly treated to give your working conditions and is available in cut multiple or fixed or length dimensions from .010" to .625" O.D. (up to 12' in certain analyses). For more information write for Bulletin 11.

Superior
THE BIG NAME IN SMALL TUBING

SUPERIOR TUBE COMPANY • 2016 Germantown Ave., Norristown, Pa.

West Coast Facility Tube Company, 1710 Stalkwell Street, Los Angeles 22, California—ANgelus 2-2131

▼ FREE!!!—Details by IEN-11914 if you write the maker ▼

CRANE . . Power boom equipment mounted on Minneapolis Moline tractor

Source: CLYDE IRON WORKS
Michigan & 29th Ave. W., Duluth 1, Minn.

Load rating has been increased from [illegible] to [illegible] on the boom base and is commensurate that been noted in the work assembly of the Model Crane gravity drop-hook IEN-[illegible]-49. As in the previous design the unit is mounted on a tractor and hydraulic pressure is now put over the 18-ft. boom is supplied by an engine-driven pump. The tool line is driven by a hoist with power takeoff by [illegible] from the side of the engine in unison with the swing movement on the crane turntable-bearing base.

Lift speed is at 50 fpm with [illegible] to 25 ft. when the boom is set for a 10-ft. reach in front of the base. The tractor travels at speeds to 12½ mph. It has a 12½-ft. turning radius. The assembly permits the boom to swing through a complete circle. Maximum height with the boom in up position is 24 feet.

▼ FREE!!!—Details by IEN-11915 if you write the maker ▼

POLISHING . . Abrasive stones made of silicon carbide, color coded

Source: ELGIN NATIONAL WATCH CO.
105-9 National St., Elgin, Ill.

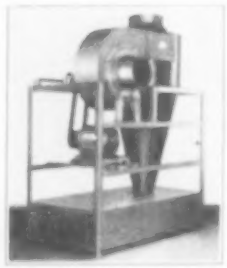
To hand finish dies, molds, tools

Prime [illegible] of silicon carbide, vitrified grain. Fully round and round abrasive stones ranging from [illegible] in diameter and from [illegible] in thickness. Rockwell [illegible] hardness by [illegible] in width and length. [illegible] are covered in stock. Dimensions available up to [illegible]. [illegible] supplied in colors. From [illegible] in stock—in lots [illegible] and over.

▼ FREE!!!—Details by IEN-11916 if you write the maker ▼

DUST COLLECTING . . Cyclone unit to serve dust producing equipment

Source: AGET-DETROIT CO.
401 Main St., Ann Arbor, Mich.



Dust-laden air is drawn in through a 15-in. inlet by a centrifugal blower driven by a 15-hp. motor operating on 220 or 440-volt three-phase ac. specified in this new Model 16X20. Dust is separated from the air in the cyclone a sliding compartment in the base. The air is discharged in out doors through an [illegible] outlet. Rating is 10,000 cfm. [illegible] in of static suction at the inlet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

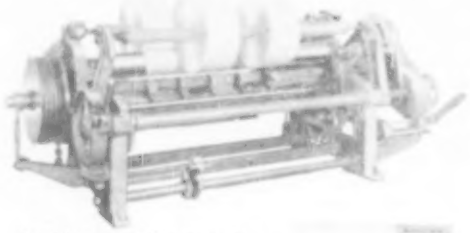
▼ FREE!!!—Details by IEN-11917 if you write the maker ▼

ASSOCIATED BAG & APRON CO.
2640 WEST BELDEN AVENUE • CHICAGO 47, ILLINOIS

▼ FREE!!!—Details by IEN-11918 if you write the maker ▼

Camachine 28-3D

A fast slitter-rewinder specially designed to produce top-quality rolls of coated or tacky papers and fabrics



Another great Camachine! The 28-3D featuring [illegible] slits, produces top-quality rolls of uniform density regardless of variations in the edges of the material. Positive roll separation is assured by the use of two separate control shafts. Handles web up to 72" wide at speeds up to 300 f.p.m. Produces removable rolls in cores as 1", and 3", with special [illegible] and up to 30" dia. Write for Bulletin 2020.

CAMERON MACHINE COMPANY
61 POPLAR STREET • BROOKLYN 2, N. Y.

▼ FREE!!!—Details by IEN-11919 if you write the maker ▼

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

. . . and the cost is especially low because it pays for itself many times . . . saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

▼ BREFITS—Directly to IEN-11921 if you write the maker ▼

8 WAYS BETTER THAN FRICTION TAPE*

Polyken® No. 163 ELECTRICAL TAPE

Check These 8 Extras:

- Higher dielectric strength
- Better moisture barrier
- Less bulk—equal strength
- Higher tack (quick stick)
- Cleaner (doesn't collect dirt)
- Unwinds easily
- Doesn't fray
- Sticks firmly

Now for the first time in over 75 years comes a bona, revolutionary improvement over sticky, old, fashioned friction tape. It's POLYKEN No. 163 Electrical Tape . . . available now through your electrical distributor in three convenient packs. And dependable POLYKEN No. 163 costs no more than most ASTM friction tapes. See your distributor or write today for free folder "Tape It Yourself." Address POLYKEN, Dept. D-12, 321 W. Adams St., Chicago 6.

Polyken® BAUER & BLACK
INDUSTRIAL TAPE

▼ BREFITS—Directly to IEN-11922 if you write the maker ▼

Uptegraff DRY TYPE TRANSFORMERS

IDEAL FOR INDUSTRIAL SERVICE

Useful information is given in the new Uptegraff Bulletin on Dry Type Transformers. The use of this equipment is growing steadily, due to the economies inherent in dry type transformer installations.

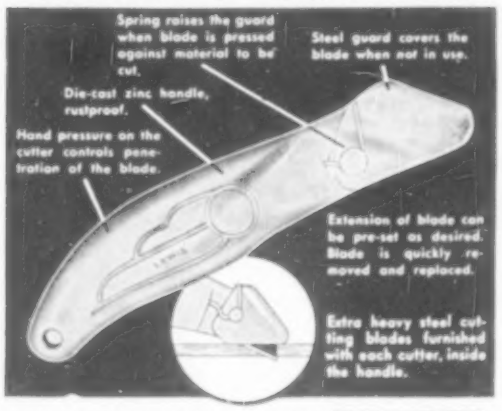
Write today for your copy of bulletin 126!

R. E. UPTEGRAFF MANUFACTURING COMPANY
SCOTTDALE, PENNSYLVANIA

▼ BREFITS—Directly to IEN-11923 if you write the maker ▼

A New Invention . . . Safe . . . Different

LEWIS Automatic SAFETY CUTTER



Here is a new patented knife that cuts swiftly, surely, safely . . . yet protects the user from injury. Always safe because the blade is guarded — always ready to use because there's nothing to adjust.

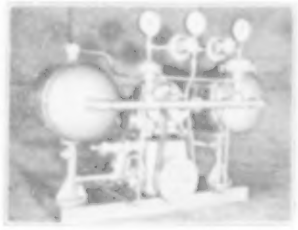
$1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

▼ BREFITS—Directly to IEN-11924 if you write the maker ▼

DRIVE . . Dual pressure pump and controls for press operation

Source: ORACLE ENGINEERING & SALES CORP.
613 N. Stone Ave., Tucson, Ariz.



New assembly [illegible] pump [illegible] low pressure to close and open a point at high speed and low pressure and to hold at high pressure for a short period. The pump is a vane pump and is which [illegible] piston and pulse area is determined by an [illegible] position of sleeves that form part of the pressure accumulator.

The sleeves shift, depending on the operating cycle, for change from high volume at low pressure to high holding pressure at low volume. Plunging action [illegible] machine a predetermined high pressure and reducing the [illegible] of pressure needed to return to action. The pump operates [illegible] high to low pressure operation as required to return a press [illegible] to retracted position.

Low pressure range is 100 to 250 p.s.i. with high pressure at 500 to 1,200 pounds. Delivery is 8 gpm. at the low pressure, 1 gpm. at high pressure. Other characteristics are elimination of metal-to-metal contact and rapid flow in pressure holding that may cause overheating. Power input also is minimized.

Bulletin 200, 4 pages, illustrates and describes the principles involved and the controls making up a complete assembly.

▼ BREFITS—Directly to IEN-11925 if you write the maker ▼

METALS . . Aluminum is laminated with copper on one or both of its faces

Source: GENERAL PLATE DIVISION
41-45 Forest St., Attleboro, Mass.

Ask for sample and detail data

Alcoplate [illegible] company's powder-metallurgy [illegible] process in which copper is permanently bonded on one or both sides of the aluminum. The process assures uniformity of resale, efficient and economical [illegible]. Strength of the bond equals that of the aluminum. The metal holds an affinity to aluminum. Tubing of the metal makes an ideal means to join aluminum to copper tube. Enclosures can be spun or drawn from the metal. The copper surface is suitable for soft soldering.

Typical single immersion cycle for 80/20 is aluminum and copper by thickness. Minimum copper thickness for a perfect overlay is .005 inch. Typical double-clad laminations with aluminum in the center is 0.015/5 of 10/80/10. Other ratios can be specified. Both combinations are characterized by their ability to conduct electricity and heat both parallel and perpendicular to the lamination.

Sheet or strip is available to 6 in. in width and to ⅛ in. in thickness with greater width or thickness on special order. Single and double-clad tube are made in the same aluminum-copper ratios as the strip and in outside diameter to 1 inch. Wire will be made available when specified in sufficient production quantity.

Alsiplate, a companion lamination of aluminum and silicon alloy is available on the same basis as the Alcoplate. It is for coverings and decorative uses.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ BREFITS—Directly to IEN-11926 if you write the maker ▼

A complete steam plant backed by universal engineering ability • Shipped completely assembled • More than 90% thermal efficiency guaranteed • 4 gas-tubes provide low 8 cf/hr. burning surface per h.p. • Burner is desired fuel eliminates need of separate chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long good dependability • 12 sizes from 20 to 500 h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details write to company [illegible]

Superior STEAM GENERATOR

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Chicago, Illinois
Executive Offices: Lewis Building, Times Square, New York 18, N. Y.

▼ BREFITS—Directly to IEN-11927 if you write the maker ▼

Quality that saves money . . . that's why

Today it's Roebling!

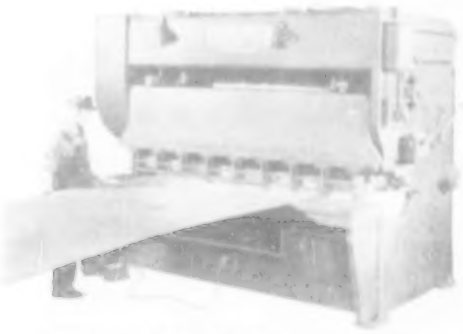
for Cold Rolled Spring Steel

If you can down production time, you save money! If you can down machine stoppage and repairs, you save still more! And you'll make all these savings with Roebling Cold Rolled Spring Steel because it's absolutely uniform . . . dimensionally and in physical properties. It is furnished uncoupled in bright finish . . . tempered in yellow finish, polished, polished and blued, polished and tempered.

Have your Roebling Field Man help you select the particular quality size that will improve both your product and your production. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING
A CENTURY OF CONFIDENCE

▼ BREFITS—Directly to IEN-11928 if you write the maker ▼



ALL STEELWELD SHEARS *Controlled Electrically!*

Convenient electric foot-switch operation is standard for all Steelweld *Pivoted Blade* Shears. The switch can be slid around from to wherever foot-foot. It also makes foot-foot lug lifting required for most mechanical foot treadle.

Steelweld Shears are built in all sizes for gauge to 1 1/4" thick. Get the facts on these heavy duty machines.

Write for free catalog No. [illegible]

THE CLEVELAND CRANE & ENGINEERING CO.
4228 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

▼ BREFITS—Directly to IEN-11929 if you write the maker ▼

YOU SAVE
- STEEL
- MANHOURS
- MONEY

BY USING

PLATECOIL FOR TANK HEATING AND COOLING

YOU SAVE CRITICAL STEEL because "Platecoils" require less than ½ the steel used in pipe coils of the same surface area. A 22" x 42" Platecoil weighs 95 lbs. against 240 lbs. for an equivalent 1" pipe coil. Less lbs. steel saved. YOU SAVE CRITICAL MANHOURS because "Platecoils" are easily installed, cleaned or replaced in minutes. See them now.

No tank changing. More manhours saved.

YOU SAVE MONEY because "Platecoils" cost up to 30% less, at equal cost and require less maintenance. Investigate "Platecoils" today.

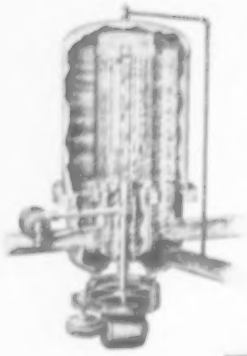
Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL Division
KOLD-HOLD MFG. CO.
LANSING 5, MICHIGAN

▼ BREFITT—Identify by IEN-11930 if you write the maker ▼

Cut Your Water Bill

Make river or lake water fit for plant services . . . clean and recirculate used water – with CUNO FLO-KLEAN strainer.



COMPLETELY AUTOMATIC

Automatic backwash system – automatic blow-down.

NO WATER WASTED

Backwash water is returned to system.

SELF-SUPPORTING

Many FLO-KLEANS have paid for themselves in a matter of months.

Free bulletin

Address Cuno Engineering Corporation, 6012 South Vine St., Meriden, Conn.

CUNO

Fluid Conditioning

Removes More Sizes of Solids from More Types of Fluids

NO FLUID IS BETTER THAN ITS FILTRATION

▼ BREFITT—Identify by IEN-11931 if you write the maker ▼

Let this all-purpose

DEWALT

save money in Your plant

Here is the ideal, all purpose machine you need to cut costs and step up production in your plant. DeWalt is many machines in one! It dadoes, routs, shapes, tenons, grinds, sands, etc.! It's fast, accurate, safe, dependable. It takes up little floor space – and streamlines all your cutting operations. Write for catalog. DeWalt, Inc., 1812 Fountain Avenue, Lancaster, Penna.

DEWALT INC.

A subsidiary of American Machine and Foundry Co.

▼ BREFITT—Identify by IEN-11932 if you write the maker ▼

World's Most Widely Used

PORTABLE DIAL SCALE

This portable Toledo commonly cuts of a great variety of applications in business and industry. Sturdily built to withstand heavy usage and maintains precise weighing accuracy. Rapid automatic weight indication furnished by Toledo Double Pendulum Mechanism. Wide choice of dials. Capacities to 1000 lbs. Send for Bulletin 2029. Toledo Scale Company, Toledo 1, Ohio.

Portable Scale for weighing at block level height. Shown with adjustable wheeled stand and multi-packing boxes, part.

TOLEDO

HEADQUARTERS FOR SCALES

▼ BREFITT—Identify by IEN-11933 if you write the maker ▼

PROTECTING . . Plastic face shield assembles on an adjustable headgear

Source: FENDALL CO.
4629-33 N. Western Ave., Chicago 25, Ill.

Type 1 with a combination nose guard and spark deflector and **Type 2** with an open venting tip for use in hot locations are new assemblies of transparent plastic face shield and adjustable headgear. The plastic unit is bound with an aluminum edging and is equipped with snap fasteners that button to the headgear. The front section of the headgear is fitted with a replaceable leather sweatband for user comfort.

Shield or window sizes range from 4 by 11 in. to 7½ by 16½ in. in three thicknesses from .02 to .06 inch. Three units in the line can be fitted with a wire screen in place of the plastic.

▼ BREFITT—Identify by IEN-11934 if you write the maker ▼

MARKING . . Self-adhesive tape with printed words for laboratory use

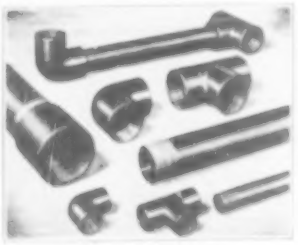
Source: FISHER SCIENTIFIC CO.
715-19 Forbes St., Pittsburgh 19, Pa.

New assembly of three rolls of printed tape and a dispenser provides means to label containers in a laboratory with the words "Poison," "Flammable" and "Corrosive." There are 200 repetitions on each roll, each measuring ½ in. in width by 3½ in. in length.

▼ BREFITT—Identify by IEN-11935 if you write the maker ▼

PIPE . . Rigid extruded plastic, ¼ to 2 in. with threaded fittings

Source: CARLON PRODUCTS CORP.
10229-33 Meech Ave., Cleveland 5, Ohio

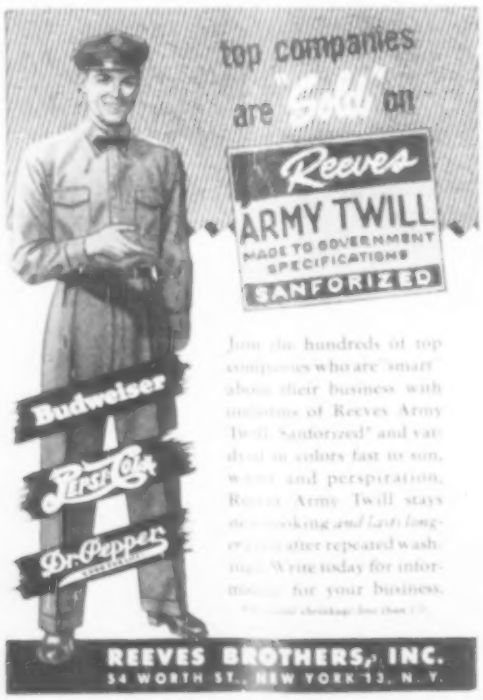


Carlon TL is a new rigid pipe in the company's line of pipe and fittings made of plastic. It is made in standard sizes with threads and is available with a line of plastic fittings also threaded. Sizes range from ¼ to 2 in. with random lengths to 20 feet. Threads can be cut in the field with standard pipe threading tools.

Bursting pressure in the ¼ in. size is 1000 lb. and in the 2 in. size is 500 pounds. Weight per foot ranges from 118 to 508 lb. in the ¼ to 1 in. sizes now available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREFITT—Identify by IEN-11936 if you write the maker ▼



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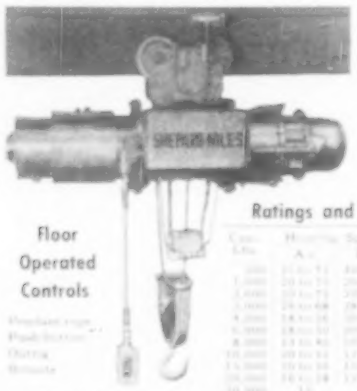
With Outstanding Wear-Eliminating Features

Single or multi-speed control with positive and frictionless "Balanced Drive" distributes all stresses evenly. Oil bath lubrication assures long, trouble free operation. Sealed housing keeps out abrasive dust and moisture. Anti-friction Bearings.



Types

Floor Operated Controls

Ratings and Capacities

Cap. Lbs.	Hoisting Speeds A	D	Lift Feet
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]
[illegible]	[illegible]	[illegible]	Up to [illegible]

Write for free literature

Shepard Niles CRANE & HOIST CORPORATION

456 SCHUYLER AVE. • MONTOUR FALLS, N. Y.

▼ BREFITT—Identify by IEN-11938 if you write the maker ▼

SEMI-LIVE SKIDS

Typical Ironbound Money-Savers

★ Short-haul units for carrying loads up to 2,500 lbs. safely and easily. Made of new billet steel and selected hardwood. Bolted construction allows replacement of deck. A short haul system is comparatively inexpensive because a few lift jacks will service many skids.

● This semi-live unit has permanently attached box top. Can also be made with removable top or tiering type top if required.

● Semi-live skid with stake pockets and removable side racks. Available also with end racks, wood or pipe stakes or super structures to meet individual requirements.

Bulletin 7-34 illustrates these units.

IRONBOUND

BOX & LUMBER COMPANY

Materials Handling Division

50 HOFFMAN PLACE • HILLSIDE, N. J.

SKIDS • SEMI-LIVE SKIDS • DOLLIES • FLOOR TRUCKS

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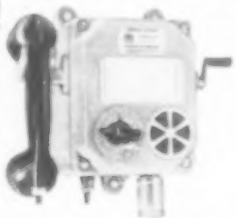

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▼ REFER IT—Identify by IEN-11940 if you write the maker ▼

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QUICK-- EASY-- ACCURATE with

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LINK-BELT COMPANY

Book 2274 Gives full details

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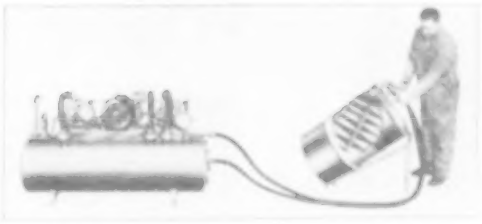
DIETZGEN

DRAFTING, SURVEYING & PRINT-MAKING MATERIALS, INSTRUMENTS & EQUIPMENT

▼ REFER IT—Identify by IEN-11943 if you write the maker ▼

CLEANING . . Spray washing machine for steel drums, circulates solvent

Source: GILBERT & BARKER MFG. CO.
100 Cold Spring Ave., West Springfield, Mass.



Internal flower the grease are assembly of a combination supply and vacuum tank, pressure and vacuum gauge, flow and return hose and a combined spray and suction nozzle for tank cleaning. Drum turntables drums are placed on about 45 deg. on a supporting rack or cradle supplied by the user and the nozzle is inserted through the bung opening.

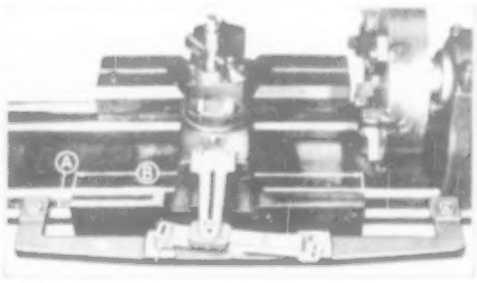
Turning two valves open flow passages to spray the drum wall through a large number of small openings in the nozzle spray area and, at the same time, to back up the spent solvent through a central passage for return to the tank. Cleaning time is about two and one-half minutes per drum including handling.

The two pumps are driven by a single belt-connected explosion-proof motor mounted on the tank. The delivery at 30 lb pressure to the nozzle. The other maintains wet vacuum of 15 inches. The solvent is returned to a suction compartment in the tank from where it is filtered and delivered to the main supply compartment. A level gage and reel are mounted on the latter compartment. Vacuum and pressure gages complete the assembly.

▼ REFER IT—Identify by IEN-11944 if you write the maker ▼

LATHES . . Taper attachment for any engine or tool room lathe

Source: MASTER-TAPER CO.
4529-33 N. Beacon St., Chicago 40, Ill.



C-shaped clamp secures to the bed of an engine lathe or bedmount lathe, as at A in the illustration, to straddle the lathe carriage shown at B and leave sufficient clearance for 12 in. of longitudinal carriage movement on a 2 cross setting. The clamp carries an adjustable taper slide to control cross movement of the carriage after the cross feed screw has been removed. The slide can be set for max-ratio taper of 20 deg. or 4 in. per foot depending on the specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ REFER IT—Identify by IEN-11945 if you write the maker ▼

WITH ELECTRONIC AMPLICALL

THE BETTER BUSINESS INTERCOM SYSTEM

SEE YOUR CLASSIFIED PHONE BOOK

Electronics is our business

SOUND EQUIPMENT — Rauland — INTER-COMMUNICATION

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▼ REFER IT—Identify by IEN-11946 if you write the maker ▼

Over Half of America's Top Companies Use "Speed Sweep"

THE BRUSH WITH THE STEEL BACK

MILWAUKEE DUSTLESS BRUSH CO.
MILWAUKEE 3, WISCONSIN

▼ REFER IT—Identify by IEN-11947 if you write the maker ▼

THE HP-600 ARBOR PRESS

For EFFICIENCY and ECONOMY

$14.00 POSTPAID U.S.A.

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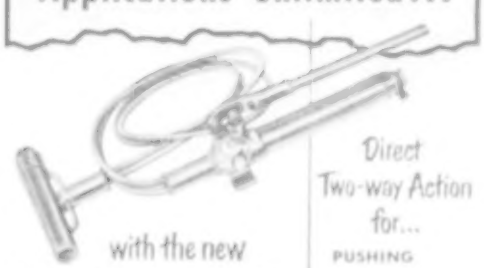
1754 S. MICHIGAN AVE.
KALAMAZOO, MICH.

▼ REFER IT—Identify by IEN-11948 if you write the maker ▼

Applications unlimited...



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Direct Two-way Action for...

PUSHING
PULLING
BENDING
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LIFTING
LOWERING
STRAIGHTENING

Hein-Werner HYDRAULIC JACKS

Hein-Werner Corporation — Waukesha, Wis.

▼ BREFIT—Identify by IEN-11949 if you write the maker ▼

THIS NEW SHEAVE is the Input-Output end of controlling speeds while machines are running. One finger has everything automatically. Speed changes from 1:1 to 3:1 (or 100% range, 2 to 1 ratio).

Can this new sheave throw you the way to increase production by setting cutting speeds exactly through-out the range for highest production? How to increase quality, or change to new materials, all at the twist of a wrist? For complete facts and figures on how the new Vari-Pitch Automatic Sheave can save you money, call your A-C Authorized Dealer or Sales Office or write for Bulletin 20B7131. A-1104

Vari-Pitch is an Allis-Chalmers trademark

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MILWAUKEE, WIS.

ALLIS-CHALMERS A-C

▼ BREFIT—Identify by IEN-11950 if you write the maker ▼

No Other Finishing Method Compares

IN SPEED— EFFICIENCY— COST PER DIE!

ABRASIVE No. 5AWF

INTERNAL FINISHER FOR CARBIDE DIES

Here's a complete carbide die grinding service in one machine . . . offered exclusively by "ABRASIVE". It performs all 8 finishing operations at one setting—produces a true hole of 2 RMS microinch smoothness or better without lapping, honing, or polishing. In 60 seconds, it can remove 0.12" stock from a 2" hole. Multiple wheel head slides permit grinding 2 angles or straight holes and tapered holes . . . at the same time.

With the No. 5AWF you can often cut costs by at least ½ . . . reduce finishing time to a fraction of the time previously required . . . handle an unusually wide range of carbide die sizes for an unlimited number of drawing applications. For complete details write "Abrasive Machine Tool Company," 18 Dunellen Rd., East Providence 14, R. I.

"Abrasive Quality is Reflected in the Finish of Your Product" — ABRASIVE PRODUCTION

▼ BREFIT—Identify by IEN-11951 if you write the maker ▼

TEMPILSTIKS°

The amazing Crayons that tell temperatures

in
WELDING
FLAME CUTTING
TEMPERING
FORGING
CASTING
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DRAWING
STRAIGHTENING
HEAT TREATING
IN GENERAL

$2 each

• Select the Tempilstik for your working temperature.
• Mark your workpiece with it.
• The Tempilstik will melt at exactly that temperature.

113°	113°	113°	450°	800°	1250°	1400°
117°	117°	117°	500°	850°	1300°	1450°
118°	118°	118°	550°	900°	1350°	1500°
121°	121°	121°	600°	1000°	1400°	1550°
122°	122°	122°	650°	1050°	1450°	1600°
125°	125°	125°	700°	1100°	1500°	1650°
127°	127°	127°	750°	1150°	1550°	1700°
130°	130°	130°	800°	1200°	1600°	1750°

Also available in pellet and liquid form

WRITE for free booklet to TEMPIL CORPORATION, 132 W. 22nd St., New York 11, N. Y.

FREE—"Tempil" Basic Guide to Ferrous Metallurgy

NAME
COMPANY
ADDRESS

For Your Special Information

ALL MAKERS ARE LISTED — IEN 5-36

Each day's mail brings us news of changes in manufactured products of every description, plus numerous small goodbyes, back on the roster but now with an additional manufacturer, service or representative product. It becomes necessary on occasion to pack up and take on special passive sources for most convenient reference.

There is where Thomas Register comes handily to serve you through the listings of all makers of all products that are made in these United States. You have made a sketch, you know how it can be accomplished and a copy of the 1953 Edition is on hand. Now the problem shifts. Find the first of the part, or a close and again through the page, you will be able to find well-known makers where a letter goes from, using time for company supply you.

If you have not received a copy we suggest you do so now. It is available at $15 plus handling charges. Your order now will assure delivery.

PLANT MAINTENANCE SHOW — IEN 5-37

Note your calendar for January 15 to 18, the date for the Second National Plant Maintenance Show and Conference. It will be held in the Public Auditorium in Cleveland.

The show will be about twice as large as that of last year. Some 200 manufacturers will exhibit their products for plant maintenance and operation. Conference sessions, sponsored by the American Society of Mechanical Engineers and the Society for the Advancement of Management, include preventive maintenance, organization and management for maintenance, lubrication, housekeeping.

Write for free advance registration tickets and a hotel reservation form to Clapp & Poland Inc., 341 Madison Ave., New York 17, N. Y.

SAVINGS BONDS — IEN 5-38

We quote part of a letter from the Treasury Department,—"Possible overtime pay, increased employment in defense plants, high farm income make it advisable that the Savings Bonds program be developed on a broader scale and more effectively. Further potential and existing inflationary pressures the continued necessity for maintaining a broad distribution of the national debt and encouraging thrift add to the importance of such a promotion."

Suggestion by an industry leader: "I believe every company should conduct a person to person campaign right now, for the best way to promote the sale of U. S. Savings Bonds is to put an application card into each employee's hand and allow him to reach his own decision."

▼ BREFIT—Identify by IEN-11952 if you write the maker ▼

NP PRE-ENGINEERED Pneumatic DOOR OPERATORS

• Speed material handling
• Improve safety and hygiene
• Improve fire hazards
• Reduce cost of air conditioning and heat

Powered by the air engine that operates the car doors of locomotive subways

Write for bulletin DC-102

NATIONAL PNEUMATIC CO., INC.
Boston • Graybar Bldg., New York • Chicago

▼ BREFIT—Identify by IEN-11953 if you write the maker ▼

MICROCASTING

Eliminates 15 machine Operations

AT 1/3 THE COST

This particular part is a cutting knife used for knitting machinery. It originally was made from a free machining alloy and was shaped, drilled, and ground. Fifteen machine operations were required. As the metal was relatively soft for the purpose of the part, replacements were heavy.

The Microcast Process of precision casting produced this same part with only a grinding operation required. Because the Microcast Process eliminated virtually all machining operations, it was practicable to utilize the extremely hard So-lite "T" Metal for a longer life. This Microcast part was produced for ⅓ of the cost of the previous method.

WRITE FOR FREE BOOKLET

More complete information on the Microcast Process is contained in a 16 page booklet which describes many applications for Microcast and includes specific notes and a step by step explanation of the process used. Write for this valuable booklet today.

MICROCAST PROCESS — PRECISION CASTINGS

MICROCAST DIVISION
AUSTENAL LABORATORIES, INC.
224 East 29th Street • New York 16, New York
713 East 69th Place • Chicago 37, Illinois

▼ BREFIT—Identify by IEN-11954 if you write the maker ▼

No Special Wiring... with IBM Electronic Time Control

ELECTRONIC—no special clock or signal wiring. Time systems operate and are supervised by electronics over regular AC lighting wires.

ECONOMICAL—low installation cost. Time units can be re-located easily without special clock or signal wiring.

EFFICIENT—automatic coordination of clocks, recorders, and signals to the second. Uniform time is assured in all units.

Write for information today

INTERNATIONAL BUSINESS MACHINES CORPORATION
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▼ BREFIT—Identify by IEN-11955 if you write the maker ▼

FOR VENTILATION, FUME & DUST CONTROL

FLEXAUST

SPIRAL-REINFORCED HOSE LIGHT, STRONG AND VERY FLEXIBLE

Flexaust is of proven reliability for a wide variety of suction and pressure uses in ventilation, fume and dust control.

EXTREMELY EASY TO INSTALL—EFFICIENT AND ECONOMICAL IN USE

SIZES ¼" to 24" dia.
Various Flexaust types, water, acids, and other hose types also available.

BLOFLEX — Non-reinforced collapsible hose.

PORTOVENT — Ring reinforced non-collapsible hose.

Write for full descriptive data and prices.

AMERICAN VENTILATING HOSE CO.
Dept. IE-12, 15 Park Row, New York 7, N. Y.
Plant: Amesbury, Mass.

▼ BREEZE—directly to IEN-11956 if you write the maker ▼

This building saves money 3 WAYS

The next time you need additional space, let prefabricated Armco Steelite Buildings save you money 3 important ways.

1. A few unskilled workmen can erect the building in a matter of days. Valuable time is saved because Steelite Sections provide both structural support and finished surface.

2. This time saves on maintenance. Steelite Buildings are rigid, weathertight, fireresistant and lightweight when properly grounded. About all they ever need is an occasional coat of paint, and even here you save money because the special Durham-Pennsylvania steel takes paint nearly and holds it long.

3. Changing conditions can be met economically with a Steelite Building. It can easily be expanded with standard parts, remodeled, or the entire building can be dismantled and erected on a new site without loss of material.

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Middletown, Ohio

ARMCO

▼ BREEZE—directly to IEN-11957 if you write the maker ▼

At Fred Heinzelman & Sons

NEW YORK, N.Y.

Pangborn Hydro-Finish CUTS HAND POLISHING OF DIES 60%

reports Mr. J. L. Crosby, General Manager

Shown here is the Pangborn Hydro-Finish unit which set new records at Fred Heinzelman & Sons. A pioneer of heat treated dies, the company reports Hydro-Finish removes heat treat oxide discoloration, cuts hand polishing 60% to 70% and holds tolerances to a precise .0001".

Find out how HYDRO-FINISH *can save you money*

Hydro-Finish is the answer to modern cleaning, decorating and finishing problems. As Fred Heinzelman & Sons have found, Hydro-Finish virtually eliminates tedious and expensive hand buffing and polishing on tool and die maintenance.

And, on the production line, Hydro-Finish assures better bonding, electroplating, painting—gives you *the surface you want* within .0001" with no pits, grooves or hard-to-clean imperfections left after cleaning.

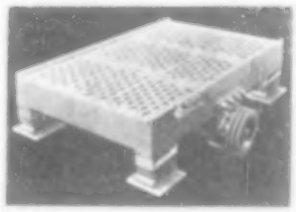
For full information on the many ways Hydro-Finish can save you money, write today for Bulletin 1400-A to: PANGBORN CORPORATION, 2400 Pangborn Blvd., Hagerstown, Maryland.

Pangborn
BLAST CLEANS CHEAPER
with the right equipment for every job

▼ BREEZE—directly to IEN-11959 if you write the maker ▼

FOUNDRIES . . Mold shakeout table, five sizes rate 1 to 2½ ton load

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Five new units [illegible] Source: [illegible] Foundries [illegible] mold shakeouts on [illegible] to 2 ft. to 5 by 6 feet. The units [illegible] up to [illegible] [illegible] the mold [illegible] the [illegible] the [illegible] the

▼ BREFITT—Ideally by IEN-11966 if you write the maker ▼

ALEMITE HOSE

For Hydraulic Systems

For Flexible Material Lines

Wherever you have material lines, you'll find an Alemite hose. Carefully tested for strength and resistance to oil, gasoline and grease—to meet and suit the purpose. Get complete details from Alemite, Dept. K-126, 1850 Diversey Parkway, Chicago 14, Ill.

ALEMITE

Industrial Lubrication Equipment

▼ BREFITT—Ideally by IEN-11967 if you write the maker ▼

NEW!

A SINGLE REDUCTION TORQUE-ARM SPEED REDUCER—

FOR SPEEDS 115 TO 330 R.P.M.

This new SINGLE Reduction Torque Arm Speed Reducer provides the matching drive frame in this range that the companion two Ratio Torque Arm Speed Reducer provides. The body is the same, capacity is equal, attachment is identical, only one speed. No [illegible] to provide. Reducing ratio is sliding from 5:1 to [illegible]. Input speed [illegible] to [illegible] r.p.m. Shaft sizes indicate unit. Dodge-to-Dodge interchangeability attainable if both [illegible].

Price [illegible] all specifications [illegible] with stock product [illegible] dependable—with capacities to 27 H.P. and operating output speeds from 115 to 330 r.p.m. Write us for Bulletin A-912 with [illegible] specific [illegible] to [illegible].

DODGE MANUFACTURING CORPORATION, 600 Dodge Street, Mishawaka, Indiana

DODGE

of Mishawaka, Ind.

FIRST IN POWER TRANSMISSION MACHINERY

▼ BREFITT—Ideally by IEN-11968 if you write the maker ▼

It's as easy as this to

ISOLATE VIBRATION

and

SAVE MONEY

with ISOMODE Pads*

Here's the [illegible] to shock, shock, vibration [illegible] to [illegible]. The Isomode Pad has proved to be one and one of the most economical [illegible] and one which does a [illegible] of isolating vibration.

By eliminating forces that [illegible] transmitted to floor [illegible] Pads reduce building damage and make deterioration [illegible] of machinery. No bolting or [illegible] cement.

Made of oil, acid and water resistant [illegible] Pads [illegible] 110 [illegible] durable. Assured [illegible] unusually long life.

*Trade Mark Reg. U.S. Pat. Off.

THE MB MANUFACTURING COMPANY, INC.
1064 State St. New Haven 11, Conn.

▼ BREFITT—Ideally by IEN-11969 if you write the maker ▼

CYLINDER . . Double acting pneumatic delivers high speed impact to front

Source: BELLOWS CO.
230 W. Market St., Akron 1, Ohio

Super Speed is new design in the company's line of Air Motor power cylinders for pneumatic operation. The new design is characterized by gravity of the cylinder to deliver a high speed impact action in forward direction combined with retraction at normal speed. The unit is available in 2½ and 2½ in. bore with any of four strokes roughly between 4 and 12 inches. The smaller unit will deliver a blow sufficient to punch a ⅛ in. hole through ¼ in. mild steel on 100 lb. air pressure.

The construction requires a valve-equipped chamber at the front and which traps air at low pressure on the forward side of the piston when the valve is turned for retracting movement. Forward movement, on turning the valve for a power stroke, compresses this air to a point where the valve moves to suddenly dump the force pressure and permit the built-up exhausting pressure to work without obstruction. The high speed action results with almost expansive force.

Two designs employ manual and electrically operated valves of the company's Electronic design. Typical applications are in forming, punching, riveting, staking, straining, forming.

▼ BREFITT—Ideally by IEN-11970 if you write the maker ▼

SIGNALING . . Photoelectric assembly operated by smoke or passing objects

Source: VALLEY FORGE SAFE EYE ALARM SERVICE
1950 Valley Forge Road, Lansdale RR 1, Pa.

Sensitivity to detect and act upon a very small change in light intensity, such as a wisp of smoke passing through the light beam, characterizes this new photoelectric signaling equipment. It consists of a light source and photoelectric receiver with an amplifier, a relay to operate an electric signal such as a bell, light or siren and a second relay to provide fail-safe action.

The light source operates on 110 volt ac. It employs an incandescent lamp and reflector for smoke detection as in fire signaling or in connection with combustion control. An infra-red lamp supplies invisible light for installation to guard against intruders. The photoelectric unit also connects to a 110-volt ac. power source. The protecting relay closes the circuit to a dry coil to operate an alarm in case the normal current fails or the normal signaling current fails.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREFITT—Ideally by IEN-11971 if you write the maker ▼

▼ BREFITT—Ideally by IEN-11972 if you write the maker ▼

Don't take less than a *Leach* for Unsurpassed Performance

LEACH RELAY CO. offers a wide range of control relays of standard types, and stands ready to link new design to your specific needs. Highest standards of engineering, materials and workmanship assure long, safe, efficient, trouble-free service.

FOR BETTER CONTROLS THROUGH RELAYS—CONTACT LEACH

LEACH RELAY CO.

5915 AVALON BOULEVARD • LOS ANGELES 3, CALIF.

Representatives in Principal Cities of U.S. and Canada

▼ BREFITT—Ideally by IEN-11973 if you write the maker ▼

U. S. Pat. 2,181,074

SPEER carbon brushes, with their freedom from sparking, overheating, and energy loss, are widely used in the electric motors that gather and pump oil. The high current-carrying capacities and excellent contact provided by Speer brushes make them equally valuable in motors for any pumping job.

A complete line of brushes has been developed by Speer to match every mechanical and electrical service characteristic. All have been rigidly tested under actual service conditions. For smooth, trouble-free commutation for peak motor performance . . .

fit your motors with Speer carbon brushes.

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CARBON COMPANY
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Brushes • contacts • welding electrodes • graphite anodes • chemical discs • packing rings • carbon parts

CHICAGO • CLEVELAND • DETROIT
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▼ BREFITS—Identify by IEN-11975 if you write the maker ▼

ELIMINATE ACCIDENTS
DUE TO ROLLING LADDERS

ROLLING CASTER CARRIES LADDER WHEN NOT IN USE — AUTOMATIC ACTION — RUBBER-TIPPED LEG "LOCKS" TO FLOOR WHEN IN USE

No longer need stock clerks lose accidents from rolling step ladders. The Baltimore All-Steel Safety Ladder speeds the work without danger of falling.

Available in one, two, three step models without handrails and three, four and six step models with handrails.

WRITE TODAY FOR FREE ILLUSTRATED CATALOG.

THE BALLYMORE COMPANY Wayne 4, Pa.

▼ BREFITS—Identify by IEN-11976 if you write the maker ▼

it's here...

The NEW, REVOLUTIONARY

Collapsible "PHIL-BOX"

Collapses from 28⅞" to 9 1/16" in Height

The new Phillips collapsible 2000 lb. capacity material handling "Phil-Box" is designed for saving space in storing and transporting bulk materials and parts. Quickly and easily collapsed or erected, the box (inside measure 48" x 37" x 24") The "Phil-Box" has no pins or loose parts. Made of heavy gauge corrugated steel, it is of all welded construction with smooth round edges for maximum safety. Can be stacked in collapsed or upright position. Five lb. or gallon truck can enter from all four sides for easy lifting.

Boxes stacked in collapsed position.

Boxes stacked in upright position.

Write for Bulletin E-14

PHILLIPS

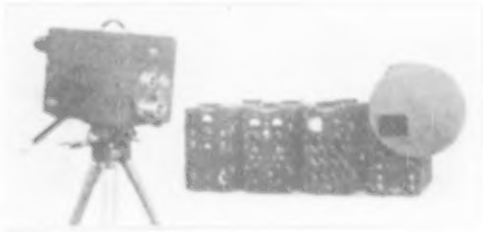
MATERIALS HANDLING EQUIPMENT

2300 JANE STREET · PITTSBURGH 3, PA.

▼ BREFITS—Identify by IEN-11978 if you write the maker ▼

SIGNALING . . Color television reproduces observed remote conditions

Source: ALLEN B. DU MONT LABORATORIES INC.
1002 Main Ave., Clifton, N. J.



Model TA 101-A is new color television equipment specifically for non-broadcast scientific and industrial applications. It is designed for remote viewing of performance dangerous to close contact in hazardous fuel to be in a position or some of conditions at a remote point, in a location subject to heating and cooling. The equipment is shown in front the connecting cables in the foreground.

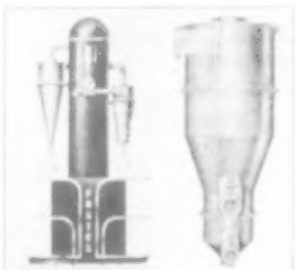
It includes, from left to right, the camera and monitor mounted on a tripod, a rack-mount unit, a monitor-only unit, the camera control unit, and the color unit for a 21-inch monitor. Not shown are the 16 mm color motion picture film that can be added as may monitor the total color required.

Power is supplied from a 110 or 220-volt ac source. The equipment can be mounted at any distance up 1,000 ft. from the camera or more with additional auxiliary equipment. The company has prepared a 12-page preliminary bulletin "DuMont Color Television Equipment for Industry" which explains the equipment and contains specs, technical and data and applications to the field.

▼ BREFITS—Identify by IEN-11979 if you write the maker ▼

SEPARATING . . Cone fractionator handles finely ground dry materials

Source: PRATER PULVERIZER CO.
1501 S. 55th Court, Chicago 50, Ill.



Twenty-one sizes are included in a new line of counter-flow classifier equipment in which fine are separated from coarse portions in a flow of finely ground dry material. Material selecting range is made to the well. The pilot and production design with a capacity range from 200 to 20,000 lb. per hr. is at the right.

Both assemblies are dual units to make an initial separation of fines and coarse particles and to discharge the fines. The coarse material is then again acted on by a second pneumatic separating action for a second recovery of remaining fines and for discharge of the final coarse material. From 10 to 25 per cent of additional fines can be collected in the second stage. Materials that can be handled include most any finely ground chemical, pharmaceutical or ceramic material. Valves are set to control the collected particle size.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREFITS—Identify by IEN-11980 if you write the maker ▼

First Line of Defense

AGAINST GALLED THREADS

WELCO NoGall and WELCO Steel Aid establish an unbroken protective film between mating surfaces . . . a metallic film accepted by leading authorities as the best defense against galled threads in tool joints and drill collars.

Consisting of powdered metallic bases blended with neutral grease binders and tacky additives, these WELCO Thread Compounds require no thinner, never harden, contain no compressible fillers and will not squeeze out under high torque.

When you buy thread compounds specify "WELCO" . . . no better thread protection is available.

SOLD THROUGH ALL LEADING SUPPLY STORES

WELL EQUIPMENT MFG. CORP.
Subsidiary of Chicago Company
Hamilton 1, Toronto
Exclusive Sales Representative Canada Mid-Continent Area
CHICSAN COMPANY
San Calif. New York 7
Export Sales: CHICSAN EXPORT COMPANY, San. Calif. New York 7

▼ BREFITS—Identify by IEN-11981 if you write the maker ▼

Largest dental equipment company makes all castings with DETROIT ROCKING ELECTRIC FURNACE melts

It is White Dental Manufacturing Company, Inc., Detroit, makes everything a dental need. A good more castings go into Dental chairs, tables, accessories and operating equipment. All metal used in these castings is melted in Detroit Rocking Electric Furnaces.

READ THE ADVANTAGES

Better control of condition, Smoother surfaces, Less Chemical contamination, Stronger or Harder castings, Better quality, higher quality, quick, clean, easy.

Get the facts on Detroit Rocking Electric Furnace operation from your Foundry which knows.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Sales Representatives in DETROIT, Southwestern Industrial Area, Detroit, Ann Parks, CHICAGO, INDIANAPOLIS, TORONTO, HOUSTON, LOS ANGELES, TULSA, Kansas City, Mo., Kansas City, Kan., Wichita, Kan., Omaha, Neb., Minneapolis, Minn., Milwaukee, Wis., Cleveland, Ohio, Pittsburgh, Pa., Philadelphia, Pa., Boston, Mass., Hartford, Conn., New York, N. Y., Buffalo, N. Y., Rochester, N. Y., Syracuse, N. Y., Albany, N. Y., Toronto, Ont., Montreal, Que.

▼ BREFITS—Identify by IEN-11982 if you write the maker ▼

Truflex Thermostat Metals, Hold the Line with Constant Temperature Control

Truflex Thermostat Metals, Hold the line with constant temperature control. Truflex Thermostat Metals are used in thousands of automatic thermostatic devices, commonly in refrigerators, gas stoves, steamers, hard goes on. This causes maximum uniformity of motion which results in longer life and guarantees higher operating performance.

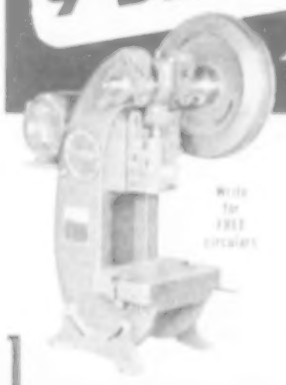
Truflex Thermostat metals are available in a complete line of combinations to meet all applications in temperature range, size, shape and form. They can be bent or cut to work in varying size and conditions, size or completely fabricated parts, ready for assembly into your product.

Write your requirements to engineering department, specifying operating temperature range, size, shape and form. Other General Plate Products include: Bimetals to take metal measurements, Rim metal laminates, Aluminum Trimmer and aluminum silverstrips, Laminated copper, Bonding wires, Precision bimetal strip, Age-hardening Manganese Alloy 120.

GENERAL PLATE
Division of Metals and Controls Corporation
712 FOREST STREET, ATTLEBORO, MASSACHUSETTS

▼ BREFITS—Identify by IEN-11983 if you write the maker ▼

NEW 7½ TON PUNCH PRESS OFFERS 9" DIE SPACE!



Ample working space for easier tooling, feeding, ejection of large slugs.

Write for 1951 circular

ALSO AVAILABLE
1-Ton and 4-Ton Standard, and 4-Ton Deep-Throat Models

benchmaster PUNCH PRESSES AND MILLERS

2952 West Pico Boulevard, Los Angeles 6, California

▼ PRETTY—Identify by IEN-11984 if you write the maker ▼

A TOOL BOX AT YOUR FINGERTIPS

SET NO. 1 FOR SMALL SHOPS

Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin D27161. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

CTW

▼ PRETTY—Identify by IEN-11985 if you write the maker ▼

for Laboratory or Field Testing...

Let a dependable Dillon Dynamometer point out the weak spots in bulky assemblies. Ideal for use with air hoists, block and tackle, turn-buckles. 9 different capacities; 0-500 lbs. up to 0-20,000 lbs., all same size; same weight. Thousands in use by leading plants and armed forces. Equipped with max. hand, shackles, steel case. Reasonably priced! Write for technically illustrated catalog.

ACCURATE DEPENDABLE

Dillon Precision

DYNAMOMETER

W. C. DILLON & CO., INC. 3401 W. S. CIRCLE AVE. FOREST PARK, ILLINOIS

▼ PRETTY—Identify by IEN-11986 if you write the maker ▼

SEND FOR ALLIED'S FREE 212-PAGE 1951 CATALOG

WORLD'S LARGEST STOCKS OF ELECTRONIC SUPPLIES for INDUSTRY

Equipment for Research, Development, Maintenance and Production

Complete, Expert Industrial Service

EVERYTHING IN ELECTRONICS FROM ONE SOURCE

ALLIED RADIO
Send for FREE CATALOG

▼ PRETTY—Identify by IEN-11987 if you write the maker ▼

TESTING . . High potential unit checks electric insulation, safe to use

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Variable output to 5,000 volts for testing, one foot or portable from a 110-volt, 60-cycle power source by the single-range, 3-range or this new Continuous Variable High-Potential Series. All instruments range to 5,000 volts is also available from the double range assembly. The unit is designed for the testing, the output current is a sine wave is safe to connect with the load. The low current value measurement will therefore not damage.

Voltage is adjusted by turning a knob on the loading box to position a potentiometer that assigns adjustable voltage to the primary of the instrument's transformer. The indicating instrument on the loading shows voltage across the equipment under test upon connecting it with the test probes provided on the transformer assembly. A glow lamp on the primary indicates transformer failure.

▼ PRETTY—Identify by IEN-11988 if you write the maker ▼

STORING . . Welded steel box for quantity order, to hold spare parts

Source: STACKBIN CORP.
1077 Main St., Pawtucket, R. I.

New facilities have been assembled by the company to fabricate welded steel spare parts boxes to specified size and design on quantity order. The assembly includes steel fittings and hardware. The boxes are suited particularly for use by the Armed Forces.

▼ PRETTY—Identify by IEN-11989 if you write the maker ▼

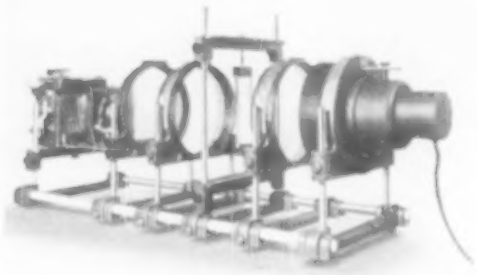
DUST COLLECTING . . Motor drive unit applies at dust producing equipment

Source: DELTA POWER TOOL DIVISION
414 E. Vienna Ave., Milwaukee 1, Wis.

Centrifugal blower driven by a ½ hp. permanently lubricated ball bearing motor in the housing of this new collector draws in dust-laden air from a machine. It passes the air through a filter panel, traps the dust for removal at intervals. The blower rates 300 cfm on 4-in. suction through a 3½-in. opening. There are two intake openings at the back. Overall dimensions are 22 by 23 by 28 inches. Clean air is returned to the room.

50 Makers of These And 50 Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ PRETTY—Identify by IEN-11990 if you write the maker ▼



A NEW, Low Cost, Portable POLARISCOPE for Dynamic Stress Analysis

Used with equipment supplied for action [illegible] photographic determination of photoelastic stresses, either from [illegible] or models. Has been successfully experienced commercially from [illegible] years.

Through use of the G-R STROBOSCOPE [illegible] light intensifier light source for photographic use of [illegible] and [illegible] Polaroid photographic [illegible] of the Polariscope and [illegible] accordingly. Has [illegible] capability to operate in stroboscopic viewing [illegible] in its [illegible] mode. The G-R Polariscope consists of an assembly of light tube, polarizers and lens mounts. The optimum focusing possible through the extremely short [illegible] consistent possible with the STROBOSCOPE. If you have any [illegible] in stress analysis, investigate this relatively new Polariscope.

GENERAL RADIO CO.
Cambridge 39, Massachusetts
NEW YORK CHICAGO LOS ANGELES

▼ PRETTY—Identify by IEN-11991 if you write the maker ▼

SAVE on OPERATING COSTS and RENT with CARD *Sturdi-Lite* SAFETY LADDERS

EASY to move around. SAFE to work on, handy shelf or basket at top. Amazingly LIGHT WEIGHT but STRONG. Rubber ALUMINUM construction including hand rails. Sturdy one-piece steps, non-skid rubber treads. Ball-bearing casters on two rear legs and front Swiveling Caster. Heavy coil spring keeps the two front rubber feet off floor until a person steps on ladder, then they lower and rest securely on floor.

WANT Time-Saving USES in factory assembly lines, inventories, work, stock, tool and file rooms, etc.

SAVE SPACE—stack things HIGH in files, shelves, bins, lockers, etc. They're easy to get at, with CARD SAFETY LADDERS.

For NARROW AISLES — 18" width in 3-step, 4-step and 5-step with shelf or basket at top.

For WIDE AISLES — 24" width in 4-step, 5-step and 6-step with shelf only at top.

ALSO 2-step Stools and Railways.

Write

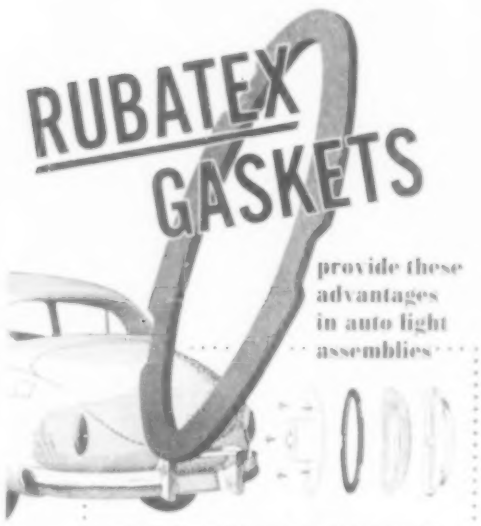
D. R. CARD COMPANY
National Distributor
829 MERCHANDISE BLDG.
MINNEAPOLIS 3, MINN.

Mfrs.: BURD METAL PRODUCTS
Clearwater, Fla.

▼ PRETTY—Identify by IEN-11992 if you write the maker ▼

RUBATEX GASKETS

provide these advantages in auto light assemblies



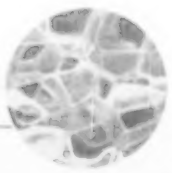
ELIMINATE BREAKING OF GLASS LENSES
PREVENT CRAZING OF PLASTIC LENSES
PROVIDE POSITIVE WEATHER SEAL
ELIMINATE COST OF MOLDED-ON SKIN

RUBATEX has helped reduce production costs for one of the country's leading auto accessory manufacturers.

The results obtained are characteristic of RUBATEX Closed-Cell Rubber. It is non-porous and will not absorb moisture even at cut edges. Inert nitrogen, retained under pressure within the sealed cells, gives RUBATEX permanent resiliency.

If you have gasketing, cushioning, or sealing problems, it will pay you well to investigate the possibilities of using RUBATEX Closed-Cell Rubber. RUBATEX is available in natural and synthetic stocks in soft, medium and firm forms. RUBATEX Division has a wealth of design and engineering experience which may be of value to you.

For further information write for Catalog RBS-1249, Great American Industries, Inc., RUBATEX Division, Bloomsburg, Pa.

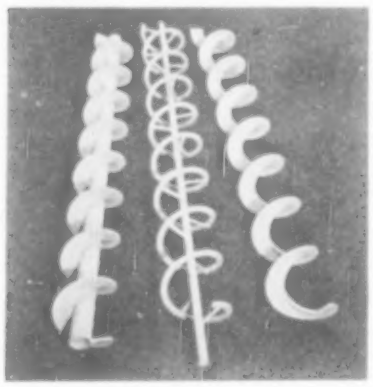


RUBATEX CLOSED CELL RUBBER

▼ BREVITY—Identify by IEN-11994 if you write the maker ▼

▼ BREVITY—Identify by IEN-11995 if you write the maker ▼

WORMS AND SPIRALS
FOR ALL TYPE
SCREW CONVEYORS



IMMEDIATE DELIVERY
PRICES ON APPLICATION
JAMES EAGEN & SONS
WEST WYOMING, PA.

▼ BREVITY—Identify by IEN-11996 if you write the maker ▼

▼ BREVITY—Identify by IEN-11997 if you write the maker ▼

HOIST . . Portable ratchet design to lift and pull has 1½ ton rating

Source: LUG-ALL CO.
329-33 East Lancaster Ave., Wynnewood, Pa.

New design of the Lug-All [illegible] is equipped with three swivel hooks on its frame, and one fixed swivel-equipped hook.

The third hook and [illegible] can be engaged for load lifting with the fixed hook actuated by the frame. Load rating is [illegible] lb. It can be engaged as load [illegible] when the fixed hook is being used for pulling. Frame [illegible] lb to 1. Hook weight is [illegible] lb. [illegible] is guaranteed as [illegible] is supplied. List is [illegible]

▼ BREVITY—Identify by IEN-11998 if you write the maker ▼

PRINTING . . Sensitized paper for photo copying on standard machines

Source: BACUM CORP.
934-38 Exchange St., Rochester 8, N. Y.

Ask for free sample

Reproductions in black and white providing sharp contrast are obtained for use of the company's [illegible]. Photo-Flex sensitized papers. They are available in a range of sizes and weights for use on standard machines. The company will quote and supply a trial sample on advice covering make and model of the machine and data on paper you are using.

▼ BREVITY—Identify by IEN-11999 if you write the maker ▼

VENTILATING . . Axial blower on portable mounting, triple outlets

Source: HARTZELL PROPELLER FAN CO.
1023-27 Roosevelt Rd., Piqua, Ohio

New assembly [illegible] the company's [illegible] Vaneaxial blower with its belt-connected motor is [illegible] for portable operation as in cooling [illegible] or discharging fumes from compartments and manholes into which workers must go. The blower delivers 1,500 cfm at 500 cfm through each outlet when connected to 6-in.-diet hose measuring 45 ft. each in length and to [illegible] turn. The outlet cap can be positioned on either end of the blower housing for pressure or suction. The small outlets have individual gates.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN-12000 if you write the maker ▼

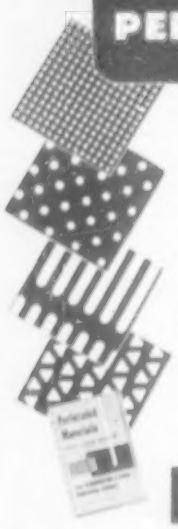
▼ BREVITY—Identify by IEN-12001 if you write the maker ▼

▼ BREVITY—Identify by IEN-12002 if you write the maker ▼

▼ BREVITY—Identify by IEN-12003 if you write the maker ▼

▼ REFER IT—Identify by IEN-12004 if you write the maker ▼

Have You Considered H & K PERFORATIONS



In answer the problems of eye appeal or ventilation or drainage or structural correction, or to provide a satisfactory material to screen, grade or guard your product.

H & K Perforations are furnished in a wide range of sizes, shapes and spacings, in all the metals and nearly all plastics which are available in the form of plates, sheets and coils.

Not only can we furnish sheets but also special sizes sheared, formed and welded if so required.

Tell us of your needs and let us make recommendations and quote you prices.

The Harrington & King Perforating Co.

5651 FILLMORE ST., CHICAGO 44, ILLINOIS
114 LIBERTY STREET, NEW YORK 6, N. Y.

Our catalog No. 42 will be promptly sent upon request

▼ REFER IT—Identify by IEN-12005 if you write the maker ▼

DO YOU WANT TO MEASURE?

For Accuracy and Convenience

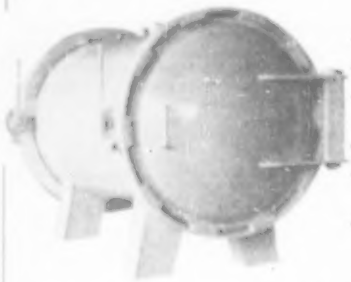
USE EMPIRE Industrial METERS

You'll save time and money handling, bottling, processing liquids with Empire meters. You'll get exact quantity control, quick! You'll cut evaporation loss, reduce fire hazards, prevent contamination. Pipe sizes ¼ in. 3 in. in a variety of registers. Automatic shut-off available on some models. Write for bulletin.

Dept. O
PITTSBURGH EQUITABLE METER DIVISION
ROCKWELL MANUFACTURING COMPANY
Pittsburgh 8, Pa.

▼ REFER IT—Identify by IEN-12006 if you write the maker ▼

Save Production Hours With HARRIS



- NO BOLTS
- SAFETY APPROVED
- CORROSION FACTOR ADDED
- LOWER PRICED
- LOWEST MAINTENANCE
- HYCAR FULL CIRCLE GASKET

Quick Opening *Safety* Doors

Harris Doors ... which consider are in use throughout the RUBBER, CHEMICAL and FOOD Processing industries. — The Harris Door is A.S.M.E. Approved and has many features to prove it. The figure assembly we have mounted over the door upon. Tedd Harris first designed the Harris Door — We can design and build a HARRIS DOOR to suit YOUR Process — Any Size — You are solving PROBLEMS — In Any metal.

TEDD HARRIS CO.
387 WHEATFIELD STREET, NORTH TONAWANDA, NEW YORK
Engineers · Manufacturers

▼ REFER IT—Identify by IEN-12007 if you write the maker ▼

TRUCK . . Battery powered in lift, platform and tractor designs

Source: MARKET FORGE CO.
23-27 Garvey St., Everett 49, Mass.

A lift design for steel platforms, one for double-face pallets, one a platform assembly for freight carrying and a tractor are included in the recently improved designs of the Market Forge Load-Mobile. The unit is available in 3,000 and 5,000-lb. ratings. It mounts a movement of the work from a closed vertical one for freight, leaving for a preferred seat so the operator can ride seated to face forward or back. He also can stand on a folding platform at the front.

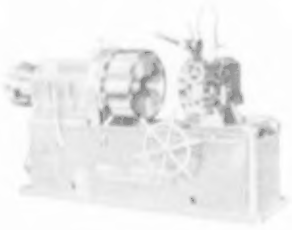
Improvements include a new high-low switch for operation in a high or a low speed range, spring-mounted casters under the body for stability in handling sharp curves, sealed ball bearings in the controls, a power chart to operate the brake, a hydraulic lift mechanism assembled vertically.

The platform assembly measures 76 in. in length, 30 in. in width, 14½ in. in platform height. The power lift and measures 77 to 113 in. in length with a 36 to 72-in. platform length. Fork width is 8 inches. Platform height is 6 to 11 in. in lowered position. Lift height is 4 inches. The tractor is 44 in. in length by 30 in. in width. It provides a drawbar pull of 400 or 500 lb. in the two speed. Five travel speed is to 4 mph.

▼ REFER IT—Identify by IEN-12008 if you write the maker ▼

THREADING . . Machine for pipe, 4, 6 and 8 in., mounts pneumatic chuck

Source: BIGNALL & KEELER DIVISION
4589-93 McRee Ave., St. Louis 10, Mo.



Series B designates new design in three sizes of the company's pipe-threading machine smallest serves range from 1 to 4 inches. Largest threads 2½ to 8 inches. The lever operated diehead is supplied with 8 sets of dies on the small machine, 9 on the large one. Carriage travel in each of the three units is 23 inches. Minimum distance chuck to cutoff tool is 7 in. on the small machine, 10 in. on the other one. Each machine operates at 8 speeds. The reversing motor rates 2 and 3 hp.

The pneumatic chuck is scroll design, universal for adjustment to a given pipe size. It is cam-operated by air pressure for the gripping and releasing actions. Both can be operated while the chuck is rotating. Tools mount on the carriage for reaming and beveling and cutoff. Cutting lubricant for the diehead, cut-off tool, reaming and beveling cutters is circulated by a motor-driven centrifugal pump. Rotating shafts are assembled in Timken roller bearings. The housing in the new design is made of fabricated steel. Floor space measures 40 by 50 in. to 54 by 106 in. in overall area.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ REFER IT—Identify by IEN-12009 if you write the maker ▼

▼ REFER IT—Identify by IEN-12010 if you write the maker ▼

Corrosion Protection for All Metal Surfaces

Hysol 4000 Coatings

Whatever the cause of corrosion, Hysol Coatings will give up to 10 years of absolute protection. Equally effective immersed in liquids or exposed to corrosive atmospheres, these coatings take the form of tough chemical and abrasion-resistant films. They can be applied by your own personnel without special equipment. With proper application strong adhesion to all metal surfaces is assured. *Write for technical data.*

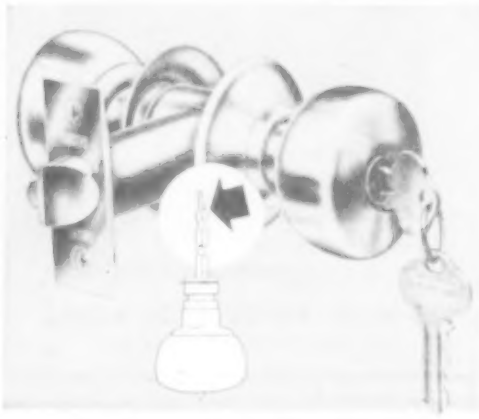
Houghton Laboratories, Inc.
OLEAN, NEW YORK

- Resistant to Salt Water and practically all chemicals.
- Applied by brush, roll, spray or dip method.
- Finish coat in eight colors.

▼ REFER IT—Identify by IEN-12011 if you write the maker ▼

National

Retaining Rings cut costs again!



This handsome new DualLock, offered by Sargent and Company of New Haven, Conn., is the result of many years of engineering research.

Its simplicity, sturdy safety, ease of application and beauty of design assure a constantly increasing demand. Because of the skill with which fine precision parts are built into this greatly simplified lock it requires only an exceptionally small cross bore.

By using National retaining rings Sargent saves material, weight, space and assembly time—without sacrificing efficiency or strength.

Examine your products—metal, wooden or plastic. Many products as well as many machines can be redesigned to use retaining rings. Groove your shafts instead of wastefully cutting down larger shafts to form shoulders. And groove your housings too.

Our high grade steel rings assure greater savings and greater margin of profit.

Let us show you how retaining rings can do an efficient job for you. These inexpensive, efficient artificial shoulders save time, save weight, save space, save materials, save money.

Write today for descriptive folder of many types of National retaining rings.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY · MILWAUKEE 2, WISCONSIN, U.S.A.

▼ BREEFITT—Identify by IEN-12013 if you write the maker ▼

THREE WAY—Two Position—Normally Closed—Normally Open—Directional Flow
TWO WAY—Normally Closed and TWO WAY—Normally Open

* Skinner Solenoid Valves are only 2¾" high x 1¾" dia., yet have large capacity within a standard range of 5 to 250 p.s.i. or special from 5 to 850 p.s.i. Progressive designers will like the accurate, long-lived, positive action, whether used for liquid or gaseous media. Skinner Valves have soft insert seats to prevent leakage—spring loaded for positive action—power consumption of 10 watts max.—usable in any position—pipe connections to suit your specifications—special coils for high humidity or high temperature applications can be supplied.

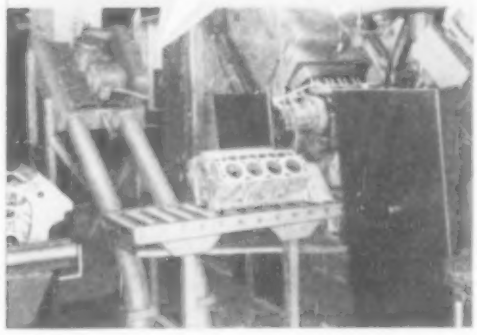
Standard models approved by Underwriters' Laboratories.

Write for Bulletin No. 501

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

▼ BREEFITT—Identify by IEN-12014 if you write the maker ▼

Fine Car Manufacturer
SELECTS
Houdaille CONVEYOR
to solve difficult chip removal problem



Because it is readily adaptable to almost any space or traverse requirement, Houdaille Conveyor solved an almost impossible chip removal problem at this large motor car plant. Conveyor has been in continuous operation for more than a year without shut-down or maintenance attention. Installation paid for itself in one year. Write for this revealing case history today!

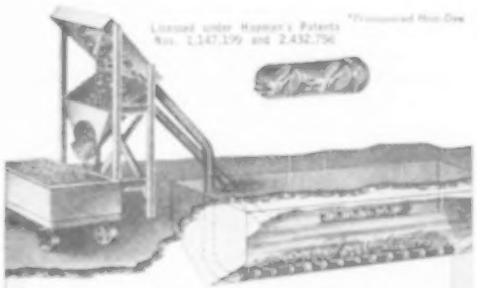
Houdaille will do the job for YOU!

Houdaille Conveyor's automatic loading and continuous material transport is adaptable to handling any solid or fibrous material which will settle to the bottom of a tank or hopper. Suggested uses are:

METAL WORKING INDUSTRY:
Cast Iron Tool and Chips
Aluminum Tool and Chips
Abrasive Sludge
Spot Welding Fine
Assembling, metal cleaning, deep rolling, brass rolling, aluminum rolling and drawing

MATERIAL FROM DUST COLLECTORS
PLASTIC POWDERS
PACKING PLANTS
Crackling
Other By-Products
SOAP MANUFACTURING
Powders, Chips, Etc.
MANY OTHERS

*Patented Non-Clog
Licensed under Hamon's Patents Nos. 1,147,199 and 2,432,756



For case histories and full information on Houdaille Conveyors, write to 802 Wabash Avenue, Decatur, Illinois.

Honan-Crane Corp. A Subsidiary of
Houdaille-Hershey Corp.

▼ BREEFITT—Identify by IEN-12016 if you write the maker ▼

GAGE . . Reads vacuum and pressure, range to 10,000 lb., square flush case

Source: AMERICAN CHAIN & CABLE CO.
927-31 Connecticut Ave., Bridgeport 2, Conn.

Square case Tri-flush housing of one line of vacuum and pressure gages has been added by the company's Helicoid Gage Division. The new case has the same bolt circle and the same round cut-out in the panel as the standard round flush cases of the same dial size. There are three sizes at 4½, 6 and 8½ inches. Width of the square front flange is less than diameter of the conventional round front flange.

▼ BREEFITT—Identify by IEN-12017 if you write the maker ▼

MARKING . . Self-adhesive labels on card to color code electric wiring

Source: W. H. BRADY CO.
14-18 E. Spring St., Chippewa Falls 9, Wis.

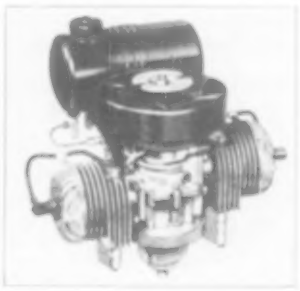
Permits purchasing one-color wire

Fourteen colors meeting the standard NEMA Code for color-marking electric wiring are available in a new line of carded Quik-Label self adhesive labels. Individual units measure ⅛ by 1½ in. and 33 are assembled on each card. They are made of silicone-treated cotton cloth with the adhesive face. They can be permanently adhered to the wire without need for moistening prior to application.

▼ BREEFITT—Identify by IEN-12018 if you write the maker ▼

ENGINE . . Two-cycle gasoline, twin-cylinder, rates 2 hp., 4,000 rpm.

Source: POWER PRODUCTS CORP.
49 Power St., Grafton, Wis.



Model 300 is a two-cycle gasoline engine of twin-cylinder vertical design. It has been developed initially to power blades to 21 in. in diameter on rotary type power mowers. It is available for other applications requiring the small engine for a speed range between 2,000 and 4,000 hp. Weight is 18½ pounds. Starting is by pull rope. Speed is controlled by a flyball governor. Lubrication is by mixture with the gasoline in the 2 qt. supply tank.

All Makes of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . . Ratings . . See Page 30

▼ BREEFITT—Identify by IEN-12019 if you write the maker ▼

- Furnished in all standard analyses
- Cast and Turned Rounds up to 10"
- Extruded and Drawn Rounds up to 4½"
- Extruded and Drawn Hexagons up to 4"
- Extruded and Drawn Squares up to 3"

Write for folder
TITAN Large Diameter Rods

Titan
Metal Manufacturing Company
Bellefonte, Pennsylvania
Representatives in Principal Cities

Quality Alloys by Brass Specialists
Brass and Bronze Rod . Forgings . Die Castings . Welding Rods

▼ BREEFITT—Identify by IEN-12020 if you write the maker ▼

Multi-Purpose Thermostat
Detects Humidity Level Accurately—Instantly
FORCED HOT AIR TUMBLER-TYPE DRYER utilizes Fenwal THERMOSWITCH unit to signal when wash is ready for removal.

A simple, low-cost thermostat solved a vexed problem of variations in wash load, humidity and outside temperature which baffled a dryer times. Inserted in the moist air outlet duct of forced hot air tumbler-type dryer, it turns on pilot light when temperature of outgoing air, no longer cooled by evaporation in tumbler, rises close to temperature of heated incoming air.

THERMOSWITCH thermostats are unique. Their activating element is the single-metal shell that instantaneously expands or contracts with temperature change, making or breaking the enclosed electrical contacts.

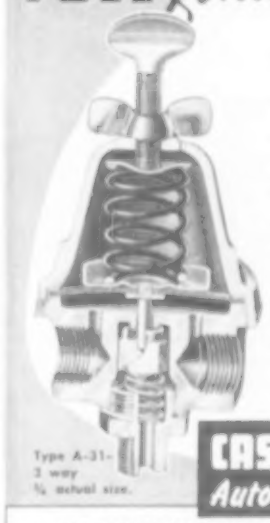
FENWAL INCORPORATED
712 Pleasant Street, Ashland, Mass.
1111 S. Burlington Ave., Los Angeles 6, Cal.
TEMPERATURE CONTROL ENGINEERS
Write for Bulletin

Fenwal

THERMOSWITCH
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE . . . *but only to heat*

▼ BREEFITT—Identify by IEN-12021 if you write the maker ▼

FULL *fluid flow!*



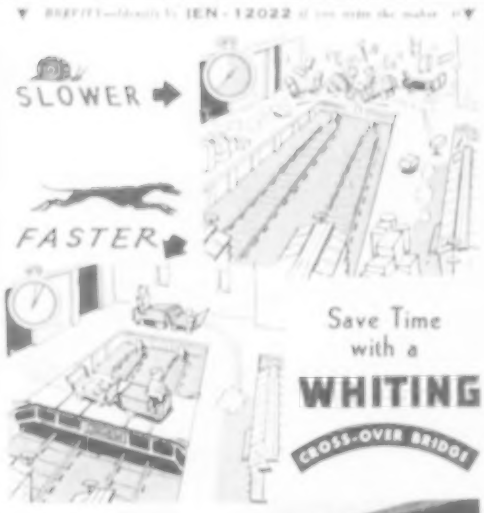
Complete information on the FULL LINE of Cash-Acme Automatic Valves is yours for the asking. Send for Catalog D12. Pressure regulation in a small unit is available in Type A-31, illustrated here—a precision made Reducing and Regulating Valve for air . . water . . gas, etc.

Type A-31—2 way ½ actual size.

CASH-ACME
Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 East Wabash Avenue, Decatur, Illinois, U.S.A.

▼ BREEFITT—Identify by IEN-12022 if you write the maker ▼



Save Time with a
WHITING
CROSS-OVER BRIDGE

You can save time—you can save money, and you can speed up materials movement from dock to dock with Whiting Cross-Over Bridges. Designed in three general types (Overhead-Rise—Ground-Level—and Roll-Away). Illustrated at right is a two-track, span Whiting Ground-Level Cross-Over Bridge.

Write for Bulletin MS-C400 and learn how these practical Cross-Over Bridges fit your materials movement requirements. Whiting Corporation, Harvey, Illinois.

▼ REPRINT—Search by IEN-12023 ▼

Whether you grind soft or hard materials, there is a Sturtevant Grinder or Crusher exactly suited to your requirements.

Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

Look into Sturtevant Grinders and Crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write today.

Sturtevant Mill Company
113 Clayton Street, Boston 22, Mass.

▼ REPRINT—Search by IEN-12024 ▼

Put these advantages in your product with *Marvinol*

In hundreds of processes . . . in thousands of end products, Marvinol is giving processors the characteristics that mean sales. Marvinol formulations are stable under heat, light and time . . . have high dimensional stability, greater low temperature flexibility, outstanding resistance to wear, water, oils and acids. Let us show you how to utilize Marvinol's time-saving advantages. All technical information developed in our modern laboratories is at your disposal since it is through you that Marvinol reaches the consumer.

Write today for the latest technical information. Dept. I-12, Naugatuck Chemical, Naugatuck, Conn.

Marvinol
Naugatuck Chemical
DIVISION OF U. S. RUBBER COMPANY

▼ REPRINT—Search by IEN-12025 ▼

Industrial **CRANES**
Improve Your Profit!

INDUSTRIAL EQUIPMENT CO.
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Write for Catalog. Representatives in Principal Cities.

▼ REPRINT—Search by IEN-12026 ▼

TRUCK . . Jack lift stacking unit to handle coil stack, rates to 6 ton

Source: ALL STEEL WELDED TRUCK INC.
1147-51 Railroad Ave., Rockford, Ill.

New assembly of structural frame and stacking jaw on an adapter for most wheels and axles is easy to take the service of a Clark 150 fork, but has designed to handle and store coil stock, stack or store, then? A novel product machine. Stacking is by a steel fork for stack of overhead crane. Platform measurements are 30 by 36 inches. Special sizes and arrangements can be specified.

▼ REPRINT—Search by IEN-12027 ▼

LIGHTING . . Emergency equipment switches to battery on power failure

Source: TROJAN RECTIFIER & EQUIPMENT CO.
2444 Beachy St., Lancaster, N. Y.

Ask for 4-page
Section 600-5
Emergency Lighting

Transfer switch, storage battery and operating battery factors make up a new assembly of equipment for emergency lighting control. The transfer switch is normally across a 120 volt ac. Lighting circuit when it is held magnetically as long as power is on the circuit. On power failure, it operates by gravity and spring action to an emergency circuit with which it supplies a storage battery. Immediate of normal power causes to operate the emergency circuit and restore the normal circuit.

The company is prepared to furnish the complete line, from Trojan to Marvel storage batteries, in a 6 volt size to supply 120 or 12 volts. The storage is available. Ratings in 6,000 to 20,000 watts in the large assembly, with a gas in the smaller one.

The schemina charging equipment is set to boil to automatically when normal power is restored and to bring the battery back to voltage and then to hold it there with a trickle charge.

▼ REPRINT—Search by IEN-12028 ▼

HEATING . . Laboratory test oven provides temperature to 850 deg. F.

Source: DESPATCH OVEN CO.
617-21 S. E. 8th St., Minneapolis 14, Minn.

Type LF is a new line of zone or electrically heated test ovens for laboratory use. Sizes range from 12 by 12 by 12 in. to 37 by 25 by 37 in. in the work chamber. Operation is based on convection connection with large air volume to speed the product interval. The work chamber is equipped with adjustable shelves.

All Makers of This And All Other Products Are Listed In THOMAS' REGISTER — Descriptions — Ratings — See Page 50

▼ REPRINT—Search by IEN-12029 ▼

New METHOD SIMPLIFIES WOOD FLOOR MAINTENANCE

PROVIDES TOUGH DURABLE SURFACE THAT NEEDS LESS ATTENTION

Multi-Clean Floor Pioneers in chemistry, pioneer in wood floors, pioneers the phase and cells of the wood surface. In forming a thin tough film that holds water, dirt, and foreign matter at the surface for easy removal. It also is an excellent base for wax and reduces slip. Combined with Multi-Clean Floor Pioneer, it has high protective and specialty—and that requires far less attention.

MULTI-CLEAN *Method* FOR EVERY FLOOR

The Multi-Clean Method designates the individuals of floor surfaces to their special care for each floor. It is carefully planned thoroughly tested and proved, combining the use of Multi-Clean Liquid Floor Cleaner and Floor Machines to achieve more easy maintenance, more attractive appearance and longer life.

FREE—MULTI-CLEAN FLOOR MAINTENANCE MANUAL

MULTI-CLEAN
Custom Cleaning Chemicals
Floor and Rug Machines • Permanent Floor Finishes • Industrial Vacuums

▼ REPRINT—Search by IEN-12030 ▼

Greater **Pay Load** *Per Operator*

. . . because it loads itself from the side

● One man equals three—one machine equals several—when you lift, load, unload, stack, haul with the amazing Traveloader! Hydraulically-operated, side-loading elevator lifts loads to 10,000 lbs., deposits material lengthwise on the Traveloader platform. Complete loading cycle—only 20 seconds. Hauls at speeds to 30 mph—stacks from ground level to 12 feet high. Handles steel, timber, pipe, poles, spooled cable—industrial materials of all kinds. Many other uses and features. Get full details now.

LULL
Traveloader
LULL MANUFACTURING CO. • 1616 E. 44th ST. • MINNEAPOLIS 6, MINN.

▼ REPRINT—Search by IEN-12031 ▼

Have you a design or production problem involving parts fabricated from woven wire cloth? If you do, why not allow us to be your manufacturing division for such parts. We have a large department specializing in the fabrication and assembly of wire cloth parts in production quantities... we are equipped to manufacture everything from ventilating screens to fuel pump strainers.

We weave our own cloth and do all the necessary cutting, forming, welding, soldering, seaming, bending, edging and fitting. You get your parts complete, ready for quick assembly.

May we quote on your requirements?

NEWARK for ACCURACY

Newark Wire Cloth COMPANY
351 VERONA AVENUE • NEWARK 4, NEW JERSEY

▼ PROFIT—Identify by IEN-12033 if you write the maker ▼

▼ PROFIT—Identify by IEN-12034 if you write the maker ▼

DUALOC BOOM CABLES

ONLY the New DUALOC gives you these 4 IMPORTANT ADVANTAGES—

1 PREVENTS FATIGUE FAILURES.
Complete flexibility with Double Hinging action. No place for hidden failures due to vibration.

2 COMPLETE, ACCURATE INSPECTABILITY.
No wrappings, tapings or solderings. You can always know the exact condition of your Boom Cables.

3 COMPLETE ADAPTABILITY.
Endings have same dimensions as zinced sockets—can be installed without alteration to present equipment.

4 NO LOWERING OF WIRE ROPE STRENGTH.
Strength in all parts equal to full catalog strength of the wire rope. You have full assurance of all the strength built into your equipment.

DUALOC Boom Cables are ACCO-Registered.
This is assurance of highest quality workmanship and top quality material—Preformed Green Strand Improved Plow Steel Wire Rope.

ASSIST THE NATIONAL SAFETY COUNCIL

Write for this folder which gives more detailed information

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

ACCO
AMERICAN CHAIN & CABLE
WIRE ROPE SLING DEPARTMENT
In Business for Your Safety

DUALOC BOOM CABLE ASSEMBLIES

▼ PROFIT—Identify by IEN-12036 if you write the maker ▼

TESTING . . Oscilloscope mounts 7 in. tube, weighs 39 pounds

Source: SYLVANIA ELECTRIC PRODUCTS INC.
1740 Broadway, 16th Flr., New York 19, N. Y.

Type 12Z is a table oscilloscope intended to meet large-scale field requirements about 10 to 20 to 17 inches. It is in fact the same model given phenomenal sales [illegible] since introduction as a "[illegible]" model back of the Sylvania Electronic product. Operating on an 110 volt 60 cycle line, it requires 40 watts.

The instrument has been designed for convenience and ease of use. Its cabinet is a molded bakelite case. Its chassis is mounted on a pull-out drawer for easy access to the tube, tubes, and components.

Some internal wiring from 10 to 20,000 cycles which can be synchronized to 60 cycles. Terminals are provided for direct connection to horizontal and vertical deflection plates and to the internal grid of the oscilloscope tube.

A vertical deflection amplifier provided a sensitivity of 1 volt for 1 in. peak to peak deflection. Stable to an frequency response at full gain is flat within 3 db of 1400 cycles from 2 to 20,000 cycles free-long peaking. Input impedance is 1½ megohms.

▼ PROFIT—Identify by IEN-12037 if you write the maker ▼

SEALING . . Silicone rubber O-rings, inside diameters 3/32 to 2-7/8 inches

Source: FREDERICK S. BACON LABORATORIES
190-94 Pleasant St., Watertown 72, Mass.

Special sizes made to order

Leakage is a problem in [illegible] pressure, temperature [illegible] and high pressure [illegible] operation of the [illegible] and [illegible] Fahrenheit range. Two [illegible] are available in a temperature range between [illegible] and [illegible] Fahrenheit. [illegible] in diameter are [illegible] to 2½ in. in 1/8 in. [illegible] increments. Special [illegible] in 3/32 in. to 1/8 in. [illegible] 1/16 inch [illegible] of 1/16 in. [illegible] 1/16 inch [illegible] of 1/16 in. [illegible]

▼ PROFIT—Identify by IEN-12038 if you write the maker ▼

HEATING . . Radiant gas burner in 12 in. sections, to 60,000 btu.

Source: GRANCO, INC.
315-19 32nd St. S. W., Grand Rapids 8, Mich.

Irradiant grid [illegible] consisting of a cast iron pressure chamber with square or angle ends and a ceramic tubed. The tubes fit into the casting, because irradiant when the burner is operating. There is no visible flame or high-velocity black spot.

Premixed gas and air are fed to the plenum chamber through a mixer that can be provided for an output range between 2000 and 60000 btu. per linear foot or per burner unit. Apparatus can be made to non-standard or as replacement on the present equipment with any burner.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ PROFIT—Identify by IEN-12039 if you write the maker ▼

10 Advantages of Clarin STEEL FOLDING CHAIRS

1) Durable Metal Construction
2) Wide 16½" Seat
3) Anatomically Correct Back
4) Perfect Comfort
5) Strong Cross Bracing
6) Quiet in Handling
7) Easy Opening and Closing
8) Artistic Design
9) "Cushion Ease" Upholstery
10) 10-Year Guarantee

write
CLARIN MFG. CO.
4640 W. Harrison St., Dept. J-12
CHICAGO 44, ILL.

There are more Clarin steel folding chairs in institutional service than any other make

▼ PROFIT—Identify by IEN-12040 if you write the maker ▼

For better metal plating . . .

SYLPHON TEMPERATURE REGULATOR No. 921

Keeps temperature accurate • Cuts Costs

This bulb automatic trip automatically prevents control phase operation before safe water level. By keeping temperature constant and preventing over heating, it helps cut down rough plating and boiling time . . . faster plating at a saved . . . reduces break down of solutions.

Not pressed, easily and quickly adjusted. Stainless steel or brass shielded thermometer bulb. Built to last, and to give trouble free service. Available with contact and indicating thermometers—also with tip type bulb for connecting temperature of gases. Send for free Bulletin AN-10.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • KNOXVILLE 4, TENN.
Temperature Controls • Electric Timers • Electric Assemblies

▼ PROFIT—Identify by IEN-12041 if you write the maker ▼

The versatile De Walt "Power Shop" does the work of 10 single purpose machines. It's a variety saw, cut-off saw, dado machine, shaper, router, mortiser, sander, horizontal drill, grinder or metal cutter.

De Walt Engineers know from experience that Klixon Protectors *help* in cutting to the minimum by preventing motors from burning out. In fact their specifications state, "MB motors have manual toggle switch with *thermal overload protection. KLIXON type built into the motor.*"

A Klixon Protector provides positive protection against overheating and burning out. Should the motor stall or an overload occur, the protector cuts the power "off". When it cools sufficiently it resets the power "on" again either by pushing the red button up, automatically depending on the type of protector used. Always specify motors with Klixon Protectors.

De Walt Summary "Power Shop" with [illegible] Klixon Overload Protection

KLIXON SPENCER THERMOSTAT
Division of Metals & Controls Corp.
212 Forest St., Attleboro, Mass.

▼ PROFIT—Identify by IEN-12042 if you write the maker ▼

buell KNOWS DUST RECOVERY

Wherever industrial engineers discover valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Pneumatic recovers otherwise lost dust with "Steel-Base" dust bin, automatic cycle hanging bin, [illegible] Buell large Pneumatic systems do not plug, require less or no maintenance. Complete design on both types of equipment on request. Buell Engineering Co., Dept. 9030, 70 Pine St., New York 5, N. Y.

buell

Engineered Efficiency in Dust Recovery

▼ BREFITS—Identify by IEN-12043 if you write the maker ▼

REALOCK

PROTECTION PLUS

- All fittings, hinges and locking devices have locks so the fence secure from tampering.
- Heavily galvanized by a special process Realock Fence is weather resistant, extra strong and durable ... costs little or nothing for maintenance. Supplied only with nails the base with ground steel arms (inset) as the last.

For complete details refer to Sweet's Catalog. For free estimate consult your classified telephone directory—or write direct.

REALOCK FENCE

MICHIGAN SPRINGS STEEL DIVISION 501 Delaware Ave., Buffalo 2, N. Y.
THE COLORADO FUEL & IRON CORP. Continental Oil Bldg., Denver 2, Colo.
THE CALIFORNIA WIRE CLOTH CORP. 1000-1199 Avenue, Oakland 6, California

BRANCHES & DISTRIBUTORS IN KEY CITIES EVERYWHERE

▼ BREFITS—Identify by IEN-12044 if you write the maker ▼

FAIRBANKS-MORSE INDUSTRIAL SUMP PUMPS

Handy, dependable. Save thousands of dollars by protecting machinery, merchandise and buildings from damage by excessive seepage and flash floods. Ideal for use in boiler and elevator pits, ash dumps, machinery base pits, storerooms, and many other places.

Fairbanks-Morse sump pumps start when water reaches pumping level ... shut off when danger is passed. Can be left unattended. Made for 2-foot sump pits. Extension columns available when settings require them. For complete details of sizes, construction features, pumping capacities and prices, write Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE,

a name worth remembering

DIESEL LOCOMOTIVES AND ENGINES · ELECTRICAL MACHINERY · PUMPS · SCALES
HOME WATER SERVICE AND HEATING EQUIPMENT · RAIL CARS · FARM MACHINERY

▼ BREFITS—Identify by IEN-12045 if you write the maker ▼

FLORITE Direct-Reading AIR VELOCITY METER

- A precision instrument for velocity under for heating, air conditioning, and ventilating work. Indispensable for measuring grille velocities and air deliveries from registers and grilles, for balancing forced air heating systems, and for checking on distribution of all kinds of ventilating systems.
- Accurate velocity readings automatically averaged over a 2" dia. free area, instantly indicated in feet per minute.
- Extension flexible backpiece positioning of instrument away from the observer for readings in hard to work locations or where the observer's body would interfere with the motion or movement.
- Unique quick lock makes possible to retain scale reading when desired until the lock is released ... an indispensable feature where instrument not is used to position individual vents from the observer.
- Leather case is furnished as standard equipment for added protection when the instrument is not in use and for convenience when carrying it in the pocket.

Models of two styles, one with a scale of 0-1000 ft/min and the other with a double scale of 0-1000 ft/min and 0-10 miles per hour.

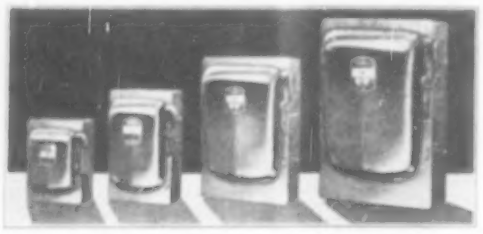
Write for Leaflet 740

BACHARACH Industrial Instrument Co.
7000 BENNETT STREET • • PITTSBURGH 8, PA.

▼ BREFITS—Identify by IEN-12046 if you write the maker ▼

SWITCH . . Lever operated design, ratings are to 200 amperes, two types

Source: SQUARE D CO.
6058-62 Rivard St., Detroit 11, Mich.



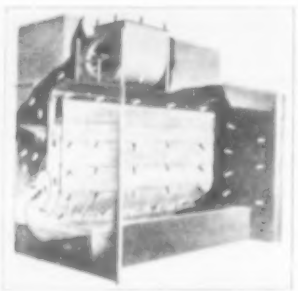
Type A for heavy-duty industrial service, Type C for standard duty and Type D for general-purpose application are now available in ratings from 30 to 200 amperes. The lever-operated mechanism provides quick make and break without dead center. A magnetic plate in the arc-chamber cover provides for high rupturing capacity. Jaws and fuse clips are steel. Current carrying parts are silver plated.

Line terminals are dead front, protected by the arc chamber. A non-tracking insulation is employed in the base and the insulating cross-bar is made of melamine plastic. Pressure connectors are removable so solder lugs can be employed in their place. The Type-A cover can be locked with as many as four padlocks. The cover can be set to hold the switch in either of its circuit positions.

▼ BREFITS—Identify by IEN-12047 if you write the maker ▼

PAINTING . . Water curtain booth exhausts air through the front curtain

Source: NEWCOMB-DETROIT CO.
5745 Russell St., Detroit 11, Mich.



New design of the water-curtain backing sheet centers in a series of horizontal panels in the company's Roto-Wash spray booth, previously described IEN-12213-49. Spaces between the panels provide for passage of air from the spray area through the water curtain at many points in addition to the top and bottom as in the earlier design. The new design is known as Up-Flow Flood-Sheet. Construction includes top hinging for access to the interior surfaces of the booth.

Five booth sizes measure 3 to 15 ft. in width by 5 ft. front to back and 10 ft. in height. Air-handling capacity at the top-mounted motor-driven blower is 5,000 to 15,000 cfm. The motor rates 3 to 10 hp. The water-circulating pump rates 170 to 450 gpm and is driven by a 1½ to 3 hp. motor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 58

FIND WHAT YOU WANT?
You may find additional suggestions in the index, page 102

▼ BREFITS—Identify by IEN-12048 if you write the maker ▼

▼ BREFITS—Identify by IEN-12049 if you write the maker ▼

One of 1458 LOAD-FLOATING WORK-SAVING Colson CASTERS

Model No. [illegible] swivel tark caster, ideal for use on medium weight equipment.

To meet every need exactly, there are 1458 different standard designs of Colson casters—many of them stocked for immediate shipment. Colson casters have long been the replacement choice of America's leading institutions because they offer big dividends in fast, quiet handling, easy work and reduced floor damage.

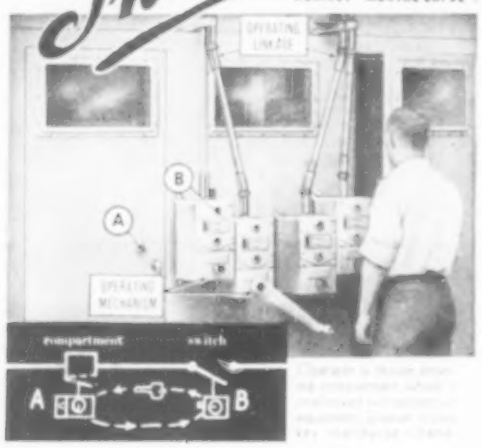
WRITE TODAY FOR FREE 68 PAGE CATALOG.

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • • LIFT JACK SYSTEMS • • INDUSTRIAL TRUCKS

▼ BREFITS—Identify by IEN-12050 if you write the maker ▼

FOR SAFETY *Interlock!*

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE"



KIRK KEY INTERLOCK *System*

Provides a predetermined sequence of operation ... and prevents "mental lapse" which might cause damage to men and equipment.

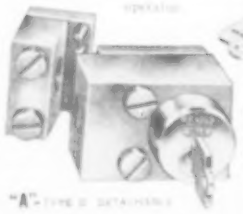
A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch locked to "B" is closed and in service. Only when protective switch with "B" interlock is opened, and locked open with a Kirk Key can the same key be released to unlock "A" ... or door.

This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked to "B" cannot be closed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.

"B"-TYPE P FLAT MOUNTING



"A"-TYPE D DETACHING

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks.

Write for Bulletin 1700 for many more details.

RAILWAY AND INDUSTRIAL ENGINEERING CO.
NEWS STREET · · · · GREENSBURG, PENNSYLVANIA

▼ BREFITT—Identify by IEN-12052 if you write the maker ▼

FOR PUBLIC ADDRESS, RADIO, and kindred fields, specify JONES 400 SERIES PLUGS AND SOCKETS of proven quality!

P-400-LCT

S-400-AB

Double Contact Area

Phosphor bronze knife-switch socket contacts engage both sides of flat plug contacts.

Socket contacts phosphor bronze, cadmium plated. Plug contacts hard brass, cadmium plated. Insulation molded bakelite. Plugs and sockets polarized. Steel caps with baked crackle enamel. 2, 4, 6, 8, 10, 12 contacts. Cap or panel mounting.

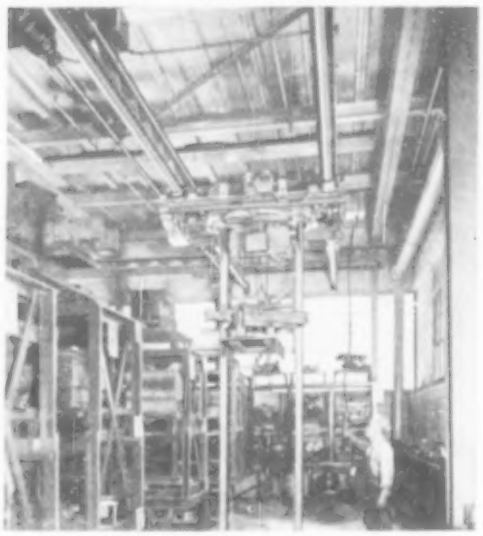
Information on complete line, in Jones Catalog 17: Electrical Connecting Devices, Plugs, Sockets, Terminal Strips. Write

Send for complete data on this new basic improvement

Jones — HOWARD B. JONES DIVISION, CINCH MANUFACTURING CORPORATION, CHICAGO 24, ILLINOIS, SUBSIDIARY OF UNITED-CARR FASTENER CORP.

▼ BREFITT—Identify by IEN-12053 if you write the maker ▼

60% MORE DIES NOW STORED



ONE MAN NOW CONTROLS DIE STORAGE WITH 60% MORE DIES STORED IN THE SAME FLOOR SPACE

Without extra building, a large Mid-Western manufacturer of internal combustion engines has solved a difficult die storage problem by installing a Louden Monorail System. Capacity of the storage area has been jumped 60%, "housekeeping" efficiency has been increased, while the labor force has been reduced from several men to one-man control.

The overhead trolley, operating on a double-girder crane with turntables, permits easy, accurate positioning of dies in assigned bins. Complete push-button operation achieves one-man control. The skid method of handling eliminates damage caused by slings or dropping.

FREE BOOK . . . Case-histories of successful Monorail applications. Write for "Economical Material Handling" today.

THE LOUDEN MACHINERY COMPANY
204 S. Superior Ave., Fairfield, Iowa

Louden

OVERHEAD MATERIAL HANDLING

▼ BREFITT—Identify by IEN-12055 if you write the maker ▼

SEPARATING . . Permanent magnets assembled in duct section, for liquids

Source: ERIEZ MFG. CO.
1303 E. 12th St., Erie, Pa.

New assembly of permanent magnets on stainless steel plates in a "sump" section of a duct separates ferrous fine particle from liquid flow. The unit is made for pipe line installations 6 to 20 in. in diameter. Capacity is 30 to 150 cfm. in flow rating.

Pressure rating is to 45 pounds per square inch. When equipped hinged plates at the sides provide access for magnet cleaning. Stepped construction in the magnets traps the ferrous particles as they endeavor get back into the flow stream.

▼ BREFITT—Identify by IEN-12056 if you write the maker ▼

HEAT TREATING . . Isolating paste prevents hardening sections of work

Source: DENFIS CHEMICAL LABORATORIES INC.
170-74 Pacific St., Brooklyn 2, N. Y.

Will not crack or shrink on work

Recent improvement has been effected in the Denfis-composition paste previously developed to coat those sections of heavy work pieces that are to be kept soft in a case-hardening operation on semi-assembled sections. The new paste is chemicalized so it can be applied and stored in cylinder form and can withstand deterioration. The paste remains in place during the hardening heat. It is brushed off the work surface after quenching.

▼ BREFITT—Identify by IEN-12057 if you write the maker ▼

PACKAGING . . Snap-on paper cover excludes rain and dirt from open drums

Source: CHASE BAG CO.
307-11 W. Jackson Blvd., Chicago 6, Ill.

Creped kraft paper, neoprene impregnated, is filled with a skirt and elastic band to form a 24-in. cap that snaps over the top of a standard 55-gal. drum or barrel. The impregnated paper has excellent wet strength, excludes rain water and dirt in outdoor storage, can be used three or four times. Sizes other than the 24-in. unit can be specified to orders calling for quantity production. List price for the standard unit is 20 to 22 cents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

▼ BREFITT—Identify by IEN-12058 if you write the maker ▼

Time to Discard OLD-FASHIONED WAYS

Jacks . . . props . . . shores . . . horses . . . why fool with these obsolete methods of handling reels? DO IT THE MODERN, EFFICIENT WAY! Reel or unreel wire, cable, rope with

ROLL-A-REEL

Simple, strong, easily handled stand for your reels to save time and labor. Adjustable slots for wide variety of reel sizes.

Style A: 2,000 lbs. cap. 37.50
Style B: 4,000 lbs. cap. 75.00
F.O.B. Cincinnati

WRITE FOR DETAILS TODAY

ROLL-A-REEL
327 WEST FOURTH STREET
CINCINNATI 2, OHIO

▼ BREFITT—Identify by IEN-12059 if you write the maker ▼

Do You Have This Data on HydrOILic Motors, Pumps, Valves ?

Send for FREE copies today

You'll find better answers to almost every hydraulic circuit need in the big line of HydrOILic Valves, Pumps, Fluid Motors and similar equipment. Designed for high pressure usage, they give added dependability for any pressure range. Your files aren't complete without these up-to-date bulletins. We'll rush the ones you want promptly, without obligation.

The DENISON Engineering Co.
1150 Dublin Rd., Columbus 16, O.

DENISON HydrOILics

▼ BREFITT—Identify by IEN-12060 if you write the maker ▼

Dependable FIRE PROTECTION

STARTS WITH ANSUL Water-tight CONSTRUCTION

The new, improved Ansul Model "B" Extinguishers have the greatest "breakthrough ratings" ever attained by hand portable fire extinguishers. In addition, WATER-TIGHT CONSTRUCTION, (Exclusive with ANSUL) has resulted in far greater dependability than any other dry chemical extinguisher.

Exclusive Features: Patented Nozzle assures most effective stream pattern . . . Best results by inexperienced operators. Corrosion resistant construction throughout. Easy on-the-spot Recharging (No tools needed). Ansul "PLUS-FIFTY" Dry Chemical used exclusively. Field tested by thousands of satisfied customers.

Send for file No. 6-29. You will receive a variety of helpful printed matter. Included is our latest catalog.

**Factory Mutual Laboratories Reports of Examinations and Tests.*

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A. CANADA AND OTHER COUNTRIES

▼ BREFITT—Identify by IEN-12061 if you write the maker ▼

Better Craftsmanship AND LOWER COSTS COME WITH PRATT & WHITNEY KELLERFLEX CARBIDE

DI-BUR
TRADE MARK

Just as Kellerflex makes craftsman — so does the P&W DI-BUR.

Operators like them, because they cut tough metals fast and easy. Because they're deeply centerflooted for free chip-clearance. Because they cut true on any contour, right down to the nose, at half the customary boring speeds — and produce fine, powdery chips that are easy on the hands.

Management likes them, because they're more economical . . . produce better work faster . . . with less load, less wear and tear on the operator, and on the machine.

It pays to specialize — with DI-BURS!

Write for additional information.

PRATT & WHITNEY
MACHINE TOOLS • CUTTING TOOLS • GAGES
90th P&W Year
SYMBOL OF ACCURACY SINCE 1860

▼ BREEFITS—directly to IEN-12062 if you write the maker ▼

▼ BREEFITS—directly to IEN-12063 if you write the maker ▼

▼ BREEFITS—directly to IEN-12064 if you write the maker ▼

▼ BREEFITS—directly to IEN-12065 if you write the maker ▼

EXPANDING . . Roll type tool for tubes has electronic drive control

Source: AIRETOOL MFG. CO.
204-8 S. Center St., Springfield, Ohio

New assembly of the company's electric equipment for tube expanding with electronic-motor governor, described in IEN-11151-49, includes a shelf-equipped hand truck to carry spare tools and accessory parts as well as the control housing. Operation is on 110-volt 60-cycle ac, or on 60 to operation cycle as required.

The control limits action of the expander independent of variation in tube-wall thickness or in tube-hole diameter so the expanding forces will not exceed safe limits for the tube metal. The control action reverses the driving motor, releases expanding pressure for withdrawal.

▼ BREEFITS—directly to IEN-12066 if you write the maker ▼

MARKING . . Revolving holder for steel stamps from 1/32 to 3/16 in.

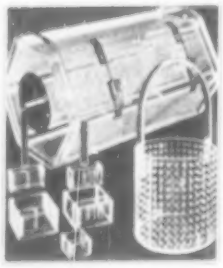
Source: ACROMARK CO.
7 Morrell St., Elizabeth 4, N. J.

New holder provides a means to position steel stamps carrying figures, letters and characters in quickly accessible position on a work bench. The holder revolves on its base. It is 10 in. in diameter and stands 6 in. in height. It is made of wood with aluminum finish and is mounted on a pin on a cast iron base. Each stamp position is identified for quick selection.

▼ BREEFITS—directly to IEN-12067 if you write the maker ▼

HANDLING . . Lucite equipment particularly for plating and pickling

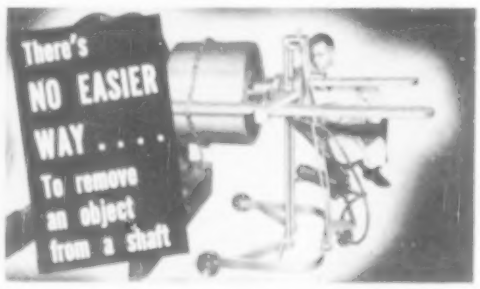
Source: SINGLETON CO.
10514-18 Western Ave., Cleveland 11, Ohio



Plating barrels, plating racks, cells, pickling baskets, tanks, etc. (after to 50 to 55 to 58 in.) make up a new line of corrosion-resistant handling equipment supporting high-temperature Lucite fabricated to specifications. The company is prepared to make the units to meet given requirements and to operate at temperatures to 220 deg. F. Fusion-welded seams test to 10,000 lb. per sq. in. in tension. The material itself is transparent.

All Makers of Items And All Other Products Are Listed In THOMAS' REGISTER — Descriptions — Ratings — See Page 50

▼ BREEFITS—directly to IEN-12068 if you write the maker ▼



The New, Improved Hydraulic

PULLEY PULLER

Enables one man to remove a pulley, gear, pinion, or other object from a shaft in minutes! No crow bars, sledges, or blow torches. No damage. Puller is adjustable, easily moved, rugged. Hundreds now in use in industry.

5-ton size
$62.50
*
20-ton size
$290.00
*
50-ton size
$655.00
(F.O.B. Factory)

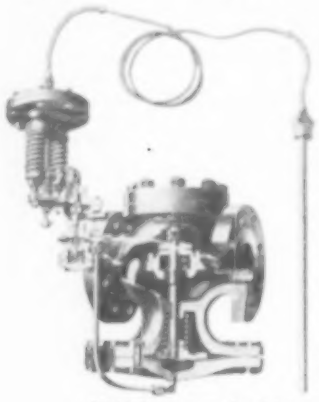
Write for complete information — Catalog A

INDUSTRIAL ENGINEERING EQUIPMENT CO.
122-124 E. 4th St. Davenport, Iowa

▼ BREEFITS—directly to IEN-12069 if you write the maker ▼

LOW COST

Temperature Control



ET150 Temperature Regulator

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from 1/4" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

▼ BREEFITS—directly to IEN-12070 if you write the maker ▼

FREE 30-page book answers all your questions about adhesives, coatings, sealers

Here's the handy reference book you've waited for—with *all* the facts on over 125 adhesives, coatings and sealers. Special chapters give technical data on products designed for automotive use—for boats, for the building industry, for many industrial applications.

No matter what your requirements—you'll probably find an adhesive, coating, or sealer that will speed your production, cut your costs or give you better results. Products are listed by color, base, solvent, viscosity, solids content, net weight per gallon, application method, advantages and uses.

The answers to the above questions are all "true". If you marked them correctly, you know that we tailor materials to meet the special needs of many industries. If we haven't got the one you want, chances are we can make it. Write today for your FREE copy of "3M Adhesives, Coatings, Sealers." Dept. IEN-125.

3M
BRAND
ADHESIVES-COATINGS SEALERS

Made in U.S.A. by MINNESOTA MINING & MFG. CO. ADHESIVES AND COATINGS DIV., St. Paul 6, Minn. Export: 99 Park Ave., New York 16, N. Y. In Canada: Canadian Minnesota Mining & Mfg. Co., Ltd., London, Ontario.

▼ FREE!!!—Identify by IEN-12072 if you write the maker ▼

Peerless-Electric

TYPE PVS EXHAUST FANS

These fans are "all Peerless"—completely designed and manufactured by The Peerless Electric Company, manufacturer of fans and motors since 1893. Both motor and fan are designed to work together as a unit. **PERMANENT SPLIT CAPACITOR MOTOR**—No internal switches or mechanical parts to fail and cause breakdowns. Totally enclosed to exclude dirt and moisture. **QUIET OPERATION**—Wide heavy gauge steel blades rotating at slow speed to assure rated capacity at low noise level. **FOUR SIZES**—Fans 16", 18", 24", 30" dia.; motor H. P. ¼, ¼, ¼, ½; CFM: 2150, 2900, 4550, 7375. Frame sizes: 24", 26", 34", 40" square. **HORIZONTAL OR VERTICAL MOUNTING**—Ball bearing in rear hood to take end thrust in all positions. **FURNISHED COMPLETE**—Controller for single speed, 2-speed, or 3-speed, furnished as ordered. **EASY TO INSTALL**—Requires only 4 or 6 lag screws or bolts to mount. **FINISH**—Gray Hammertone baked enamel. **RATINGS**—According to National Association of Fan Manufacturers and American Society of Heating & Ventilating Engineers. **GUARANTEED** against defective workmanship or material for a period of one year from date of shipment from factory. Registered serial number identifies immediately for spare parts or duplicates. Write for complete specification sheet.

THE PEERLESS ELECTRIC COMPANY • WARREN, OHIO
Established 1893

Peerless-Electric MOTORS-FANS-BLOWERS

▼ FREE!!!—Identify by IEN-12073 if you write the maker ▼

WHERE **CARBON MONOXIDE** CAN BE A WORKING HAZARD—

KNOW THE FACTS!

THE M·S·A Colorimetric CARBON MONOXIDE TESTER

- So simple in operation that no special training is required, this M.S.A. instrument indicates precisely the carbon monoxide content of air by a few squeezes of the bulb—causing a color change in chemical-filled glass tube. Protected, permanently mounted color-comparison scale permits reading CO in air from 0.001 to 0.10% by volume—ending all doubt as to safety of working atmosphere. Used throughout industry. *Write for free descriptive Bulletin BY-4.*

- Fast and simple in operation
- Weighs less than a half pound
- Tubes may be stored indefinitely without deterioration
- Unaffected by other normal atmospheric contaminants
- Anyone can use without special training

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS and MEADE STREETS • PITTSBURGH 8, PA.
At Your Service: 54 BRANCH OFFICES IN THE UNITED STATES AND CANADA

▼ FREE!!!—Identify by IEN-12075 if you write the maker ▼

SWITCH . . Multiple assemblies for machine control and indicating

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., P.O. Box 868-A, Pittsburgh 30, Pa.

Type 01 line of push, push-pull and lock-and-key and illuminated lights, are equally suitable for control of the Operating mechanism. Illustrated, The Class 10-622 line now includes new designed combinations of 1 to 12 units in one designed enclosure, with baked-enamel finish.

Capacity for contact interruption is maximum at 60 amp. on 120 volt ac. Units and nameplates can be pulsated for mounting in any position. A gasket seals the housing against entrance of oil, cutting lubricants, dirt. Terminals are convertible for front or rear conduction as required.

▼ FREE!!!—Identify by IEN-12076 if you write the maker ▼

WEIGHING . . Wheel equipped stand for hydraulic scale when not in use

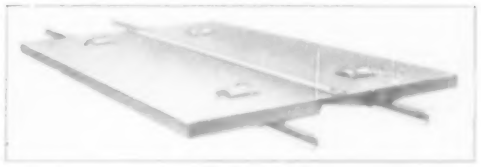
Source: HYDROWAY SCALES INC.
20622-26 W. 8-Mile Road, Detroit 19, Mich.

New Stand takes the compact Hydroway hydraulic weighing scale when it has been removed from a crane hook and is to be used for a time. The scale is supported in more upright position, easily to be picked up again to the crane. This stand, of steel, is 36 inches from ¼ to 5 feet and from 6 to 48 inches. Casters are in a weighed stand, plate.

▼ FREE!!!—Identify by IEN-12077 if you write the maker ▼

HANDLING . . Dolly rides track to carry mining equipment to location

Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Pittsburgh 3, Pa.



Phil Dolly is a new steel platform measuring 8 by 11 ft and equipped with roller bearing wheels to take up unit stress in use of hookups. The unit is supplied for 30 lb/ft track gage and is up 75 and 30 lb capacities.

All Makers of Items And All Other Products Are Listed In THOMAS' REGISTER — Descriptions — Ratings — See Page 30

▼ FREE!!!—Identify by IEN-12078 if you write the maker ▼

▼ FREE!!!—Identify by IEN-12079 if you write the maker ▼

DO YOU KNOW?

—that a PILOT LIGHT CAN IMPROVE YOUR PRODUCT

. . . add attraction—safety—service?

Ask DIALCO

THIS MAY BE THE ONE

Designed for low cost NE-31 Neon
- Built-in Resistor
- Patented
- U/L Listed
- Rugged

Catalogue Number 521308 — 997
for 110 or 220 volts.

SAMPLES for design purpose NO CHARGE

NEW! Write for the HANDBOOK OF PILOT LIGHTS

Write us on your design problems.

Foremost Manufacturer of Pilot Lights

The DIAL LIGHT COMPANY of AMERICA
900 BROADWAY, NEW YORK 3, N. Y.

▼ FREE!!!—Identify by IEN-12080 if you write the maker ▼

WILLSON PRODUCTS, INC., 217 WASHINGTON ST., READING, PA.

▼ FREE!!!—Identify by IEN-12081 if you write the maker ▼

Tough! . . . as a fingernail, water-resistant, vermin proof, all in one building board! Thick-tight Stonewall Board gives you all these features and it is easily nailed for indoor and outdoor construction, with a wide choice of grain.

Tough! makes strong, durable outside and inside walls and partitions. Does isn't ever to shrink, crack, chipped, need no painting. It is low cost, easy to install for ceilings, barrels, decks, foundations, sheds and for extra storage in the attic garage. Other reasons on back are beside.

Write for free booklet

STONEWALL BOARD

A PRODUCT OF

The RUBEROID Co.
BUILDING MATERIALS FOR INDUSTRY, HOME, AND FARM
Executive Offices: 500 Fifth Avenue • New York 18, N. Y.

▼ REPRINT—Identify by IEN - 12082 if you write the maker ▼

Ramp in "Kettle room" of large New Jersey manufacturing plant.

ferrox* FOR UNDERFOOT SAFETY ON RAMPS, FLOORS, WALKWAYS

No slipping hazard

ON THIS SURE-GRIP ferrox SURFACE

Problem . . . Soap plus moisture caused a very slippery condition on this wooden ramp in the "Kettle room."

Solution . . . FERROX abrasive, non-slip compound, troweled onto the ramp surface, gave a safe grip to busy feet—made maneuvering of hand trucks easier and safer.

FERROX is easy to apply . . . Simply trowel on danger spots . . . One gallon covers 40 square feet . . . Dries over night . . . Firmly embedded abrasive particles provide good traction and sure footing under wet, dry or oily conditions.

For free literature illustrating uses and application data, write or phone Bob Easty.

*Reg. U. S. Pat. Off.

AMERICAN ABRASIVE METALS CO.
448 COIT ST., IRVINGTON, N. J.
Phone: ESsex 3-7060

▼ REPRINT—Identify by IEN - 12083 if you write the maker ▼

Now you can valve 66° Bé Sulphuric Acid without leakage, dripping or sticking

HILLS-McCANNA Diaphragm Valves with L-1 PLASTIC DIAPHRAGMS

For temperatures to 125° F., pressures to 100 psi. Sizes ¾" through 4". Write for complete details.

HILLS-McCANNA

Exclusively molded
saunders patent
Diaphragm Valves
Zero Zero Lubricant · Magnesium Alloy Cartridge

HILLS-McCANNA CO., 2347 W. Nelson St., Chicago 18, Ill.

▼ REPRINT—Identify by IEN - 12084 if you write the maker ▼

HEAR CLEARLY in the

QUIET ATMOSPHERE of a **BURGESS-MANNING ACOUSTI BOOTH**

You can hear easily . . . talk comfortably in the quietest surroundings . . . in a Burgess-Manning Acousti Booth. The 4 walls of sound absorbent material lock up noise. Conversation is clear . . . "private." Air, too, does . . . easily moved . . . simply connected.

NOTE THESE OUTSTANDING FEATURES

- Quiet inside
- Airy interior
- Movable—lightweight
- Sanitary—open construction
- Low maintenance cost (and movable at breakable parts
- Suited to any location

MAIL COUPON FOR FREE BOOKLET

Burgess Manning Company
745 A East Park Blvd., Charleston, Ill.
Please send me your booklet describing Burgess Manning Acousti Booths.
Name
Firm Name
Street City

▼ REPRINT—Identify by IEN - 12085 if you write the maker ▼

LATHE TOOLS . . Triangular tool bit and adapters to fit in standard holder

Source: SPEED BITS
3774-78 W. 152nd St., Cleveland 11, Ohio

Speed Bits are a new design of triangular section tool bit, carrying a grip-bonded geometric sizing. This adapts, to apply with an angular flat adapter and a rectangular section, changing place in a square-hole Armstrong or Williams or other stand, and holder. The adapter is available in various angles to use the bit correctly for right or left hand cutting at a desired side-clearance angle from square to 22 degrees.

Bit sizes range from ⅜ to 1¼ in. and are available in high speed steel, cast alloys and in carbide-tipped construction. Each is ground 1/16 in. high height to provide right and left hand cutting edges that can be renewed as required. One flat ground on cutoff across the face of the bit maintains the cutting edges and support clearance.

▼ REPRINT—Identify by IEN - 12086 if you write the maker ▼

FLOORS . . Resin type liquid for non-slip finish on wood, linoleum

Source: R. M. HOLLINGSHEAD CORP.
838-42 Cooper St., Camden 2, N. J.

Removable with floor cleaners

Check-Slip is a new non-slip formulation water-emulsion resin-type liquid for application on floors covered with asphalt, rubber tile, linoleum, wood. It is applied with a mop, dries in about 30 min., is completely water resistant after 48 hours. The floor is safe, dry, clean. The surface hangs together with no being sticky, when walked upon.

▼ REPRINT—Identify by IEN - 12087 if you write the maker ▼

HEATING . . Electric panel assembly mounts in air duct, size as specified

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.

New assembly of the company's Chromalox Finstrip heating elements makes up a panel unit as shown in the illustration to heat air flowing through a duct. The assembly shown consists of four separate and removable quadrants each rated 48 kw. for a total of 192 kw. Other sizes and capacities can be specified with ratings for capacity from 10 per unit of rating up.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

▼ REPRINT—Identify by IEN - 12088 if you write the maker ▼

The Only Carbide Tool THAT NEEDS NO SHARPENING

4 STOCK STYLES

Here is the answer to the long-standing need for carbide tools on plant where there is no grinding equipment, where facilities are overloaded, or where grinding costs are known to be excessive.

The long-lasting Kennametal tip, machine-ready bind to provide a thermal strain free assembly, can be indexed or rotated to utilize all cutting edges. It thus may be discarded, if desired.

Available in four sizes . . . 1/2", 5/8", 3/4" and 1" . . . in styles shown at left. Suitable for high-rate machining of steel, cast iron, and non-ferrous materials.

SEND FOR CATALOG 49

KENNAMETAL Inc.
Latrobe, Pa.
MANUFACTURERS OF SUPERIOR CEMENTED CARBIDES AND CUTTING TOOLS THAT INCREASE PRODUCTIVITY

▼ REPRINT—Identify by IEN - 12089 if you write the maker ▼

WANTED Problems to be solved by MASONITE HARDBOARDS

These modern, easy-to-fabricate panels of "wood made better" are cutting costs and boosting quality in hundreds of plants.

Here are some of the 28 definite reasons why:

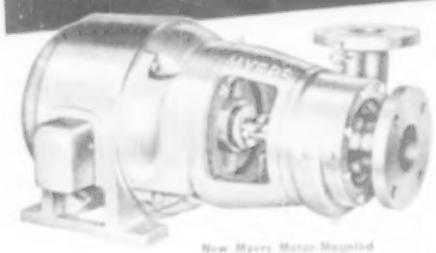
- They are dimensionally stable.
- Wood, veneer, glass, leather and most plastics can be laminated readily to them.
- They can be die-cut.
- They won't rust or corrode.

Masonite Hardboards come in 59 different types and thicknesses for industry. For complete technical data and suggestions about your production problems, write—

MASONITE CORPORATION
111 W. WASHINGTON ST. · CHICAGO 2, ILLINOIS

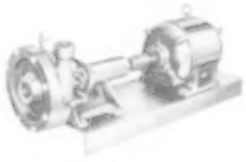
▼ REPRINT—Identify by IEN - 12090 if you write the maker ▼

New Myers Centrifugal Pumps...



New Myers Motor-Mounted Centrifugal Pumps. Extra compact. Exceptionally rugged. Perfectly aligned and balanced impeller. Sizes 1 H.P. to 20 H.P.

New Myers Belt-Driven Centrifugals. V belt or flat belt drive. Overhung shaft is removable from either end of pump.



New Myers Direct-Connected Centrifugals. Available with or without motor. Sizes ½ H.P. to 10 H.P.

pay for themselves in savings alone!

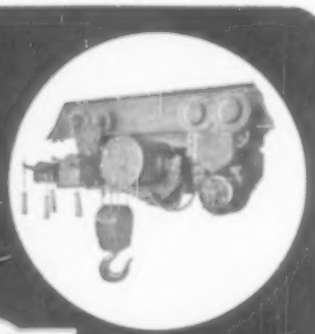
This outstanding new Myers line of Centrifugal Pumps features a giant interchangeability of parts, replaceable wearing rings, shaft fully protected against liquid, and easy replacement of seal and impeller in all changing conditions. And these are only a few of the many advantages contained in these great Myers Pumps—improvements that guarantee greater operating efficiency and economy never matched, but not secret. New Myers Centrifugal Pumps are available in types to handle any liquid, at temperatures to 200° F. Capacities range from 10 to 800 gpm, against heads up to 200 ft. Specifications and types of material furnished will on request.

Write for full list of sales features — offered for the first time in New Myers Centrifugal Pumps!

TAKE ON YOUR WAY TO MYERS

THE F. E. MYERS & BRO. CO.
Dept. T-218, Ashland, Ohio

▼ REPRINTS—Identify by IEN-12092 if you write the maker ▼



ELECTROLIFT *makes light work* of materials-handling. One man merely presses a button to get this worm-drive electric hoist to lift loads — up to 6 tons — and move them to the desired location. ElectroLift operates quietly and with very little power. For complete information on models to meet your capacity, speed and plant layout needs, phone or write your nearby ElectroLift representative listed in the classified telephone directory. Or write to address below.

ELECTROLIFT, INC. 30 Church Street, New York 7, N. Y.

▼ REPRINTS—Identify by IEN-12093 if you write the maker ▼

Another BRAND NEW SWITCH with wide applications

Model 2160A

A double pole - single throw toggle switch, this completely new Diamond H product incorporates all these long-wanted features:

- **Compactness** . . . switch body measures only 1 5/16" x 1 5/16" x 1" is specially enclosed for safety and protection of working parts
- **Quick, simple installation** . . . snap-into hole; spring clips hold firmly on any panel .025" to .100" thick. Overlapping shoulders permit simple adjustment to finish dimensions of installation hole
- **Good looks** . . . with plastic body, in assorted brown, black and white, or other colors on special order
- **Long life and positive action** . . . through rugged construction and a design principle that's new and exclusive in this application. Contacts are held together in "on" position under pressure of spring action
- **High overload capacity** . . . conservatively rated at 15 and 20 A., 125 V., 10 A., 250 V., *and up to ¼ H. P.* 250 V., A. C.

Applications include motor and heater circuits in portable appliances such as hot plates and fan type heaters, together with heavy duty air conditioning and refrigerating equipment, cooking machines . . . actually any such device that requires a rating not over 20 A. at the same time.

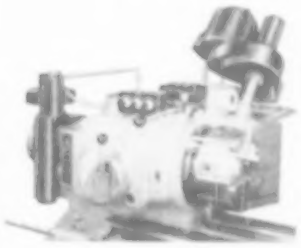
If you want the convenience, dependability, ease of use that "Diamond H" switch can give your products . . .

THE HART MANUFACTURING COMPANY
251 Bartholomew Ave., Hartford, Conn.

▼ REPRINTS—Identify by IEN-12095 if you write the maker ▼

CHUCK . . Motor driven wrench to open and close chuck on a lathe

Source: CUSHMAN CHUCK CO.
800 Windsor St., Hartford 2, Conn.



Pushbutton control, adjustable torque for desired jaw pressure, automatic opening and closing cycle, safety interlocks and chuck indexing for winch mechanism are now part of the company's Power Wrench for chucks previously described IEN-1056-16. The winch assembly is available with a chuck supplied by the company to be provided for position indexing and if desired, as it can be set up to operate any standard universal chuck on a single spindle machine. It saves re-chucking at the chuck itself or at the tailstock, the machine spindle where its indexing elements are located.

Control centers at a pushbutton station including "on" "off" and "release" buttons and a hand wheel on the lathe headstock. This station connects through an electrical control cabinet which includes a "Speeflow" torque adjustment providing a 22 per cent range in holding pressure between maximum and minimum. The control cabinet can be located in any convenient position back of or near the machine.

Electrical connections are made to a 220, 440 or 550 volt 3 phase a.c. power circuit as specified. Connection is made also to a shop air line for pressure to operate an indexing cylinder on the machine spindle and an advance and retract cylinder on the wrench spindle.

Bulletin 213, 8 pages, presents illustrations of the wrench in place of the variable torque control panel, the automatic control panel, a connection diagram for automatic operation and for operation of the wrench without pressure control. Detail explanation is included.

▼ REPRINTS—Identify by IEN-12096 if you write the maker ▼

CONVEYING . . Portable drag design for coal, rates 60 to 90 ton per hour

Source: GEORGE HAISS MFG. CO.
Canal Place & 143 St., New York 51, N. Y.

Model 436 M . . . a new medium-duty conveyor made in 20 to 30-ft. lengths. It consists a trough 23½ in. in width by 15 in. in depth with side scraping carrying flights mounting in 10 in. centers. The steel trough is carried by tables on a supporting structure equipped with a wheel for height adjustment.

The structure is mounted on roller bearing wheels with steel or pneumatic tires to specification. Height is adjustable between 8 and 12 ft. at the discharge, and between 6 and 20 ft. at the tailpiece of the 21 foot design.

All Makers of Items Not All Other Products Are Listed In THOMAS REGISTER . . Descriptions . . Ratings . . See Page 58

▼ REPRINTS—Identify by IEN-12097 if you write the maker ▼

with "UNDERWRITERS' APPROVED" P.L.S. PIPE JOINT COMPOUND

Applying an inferior pipe dope to threaded connections is a waste of time and money. It costs no more to use the best—yet the proper compound can mean extra years of trouble-free service for your equipment.

PLASTIC LEAD SEAL is insoluble in water, steam, ammonia, kerosene, gasoline, LP Gases and many other services. "PLS" never hardens—it allows joints to be easily broken years later.

Make your first application at our expense. Write today for a generous free sample.

JOHN CRANE CRANE PACKING COMPANY
1815 CUTLER AVENUE • CHICAGO 13, ILL.

▼ REPRINTS—Identify by IEN-12098 if you write the maker ▼

Insist on
COMPLETE PROTECTION for Pins and Bushings!

Specify **CMD** *Anti-Scoring* LUBRICANTS

These Concentrated lubricants have no equal for use on guide posts and bushings of die sets because they give Complete protection for a long period of time. Check their many outstanding advantages.

1. Stay without undercut
2. Do not scratch or scar
3. Stay wetted even under so many months
4. Stay viscous, slow life
5. Are lasting or persistent
6. Will not dry out
7. Will not gummy

Write for FREE sample kit of one tube each of CMD Center Point Lube and CMD Center Point 101. Address Department G2EN.

Chicago Manufacturing & Distributing Co.
1928 West 46th Street Chicago 9, Illinois

▼ REPRINTS—Identify by IEN-12099 if you write the maker ▼

▼ REPRINTS—Identify by IEN-12100 if you write the maker ▼

Cut Production Costs . . .
Permit Ease of Assembly

HERE'S HOW

- Eliminate skilled labor in key seat cutting and key fitting operations
- Are easy to assemble because of flat key bottom and cutting ratios
- Key reaches deep into shaft and is firmly controlled, enabling it to withstand greater stress
- Offer greater resistance to shaft fracture, due to shape of key seat and permanent key fit
- Complete key seat cutting in repeated shafts

Whitney Woodruff Type Keys are made in America as hard and true and Whitney Engineered even but special quality steel. They are available from Whitney distributors throughout the country of write:

WHITNEY CHAIN COMPANY
202 Hamilton Street, Hartford 2, Conn.

▼ REPRINTS—Reprint by IEN-12101 if you write the maker ▼

No Weak Spots in Wet Spots

Flamenol® Type T W

For acting in locations where water and dampness are a problem, your best bet is General Electric Flamenol Type TW wire.

Tough, thermoplastic insulated General Electric Type TW takes rugged jobs in stride. Use it in raceways or conduit—laid in concrete or masonry. For acting machinery in damp or humid atmospheres—moisture just can't penetrate its hard, smooth insulation.

Flamenol Type TW is easy to pull, clean to handle. In addition to its flame and moisture resistant qualities, the thermoplastic insulation is highly resistant to oils, acids and alkalies.

For more information on G.E. Type TW and how it can be used in many other money-saving applications, see your local G.E. Construction Materials distributor. Section W7-1242, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

GENERAL ELECTRIC

▼ REPRINTS—Reprint by IEN-12104 if you write the maker ▼

DISPENSING . . Air pressure unit flows acid from stainless steel drum

Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntington St., Philadelphia 32, Pa.

New assembly of adapter [illegible] the new [illegible] a delivery tube that extends down into the container, a delivery tube that issues from the top, a [illegible] and a relief valve to [illegible] pressure that can be opened to the atmosphere. For pressure [illegible] a shop line [illegible] pressure in the container for acid flow when the unit is opened. [illegible] in the [illegible]. List price is about $28 with [illegible]. If [illegible] and the expected fittings.

▼ REPRINTS—Reprint by IEN-12105 if you write the maker ▼

METER . . Electric panel instrument in modern design and three sizes

Source: SIMPSON ELECTRIC CO.
5200 W. Kinzie St., Chicago 44, Ill.

Etched faces extending across the fronts of this new line of electric meters are protected with plastic. Tamper-proof unique zero reset, [illegible] the front panel. Three-back adjustment [illegible] 1½, 2½ and 4½ inches. The meter is [illegible] a special [illegible] protection [illegible] a [illegible] value.

▼ REPRINTS—Reprint by IEN-12106 if you write the maker ▼

WRENCH . . Portable pneumatic tool with angle head for close quarters

Source: KELLER TOOL CO.
1940 Parks St., Grand Haven, Mich.

This new [illegible] tool [illegible] the [illegible] is [illegible] to [illegible] 1/4 inch [illegible] 1/4 inch [illegible] 1/4 inch

▼ PRODUCTS—Identified by IEN-12111 ▼

LOW COST

NO MAINTENANCE

LONG LIFE

Acme Electric Power Transformers are designed to "keep cool" with free air circulation. No oil, no water, or other coolant to buy. No "safe" transformer vault to build. No routine inspection necessary. Liberally designed for low temperature rise performance. Built for heavy duty service. Available in ratings from 1/10 KVA to 50 KVA.

ACME ELECTRIC CORPORATION
2612 WATER STREET CUBA, N. Y.

Acme ACME Electric

▼ PRODUCTS—Identified by IEN-12112 ▼

The STANDARDAIRE PRECISION BUILT *Axial Flow* BLOWER

Here's another important design feature of the Standardaire Blower — HEAT TREATED ALLOY STEEL TIMING GEARS — generated and shaved to extreme accuracy for quiet operation.

THESE helical gears keep the cycloidal form screw type rotors of the Standardaire Blower in timed relation. There is no wind-up in the shafts between the rotors and gears as a very small percentage of the input power goes through the timing gears. The male or main rotor does the work and consumes the power, the female rotor acts simply as a valve or gate — further evidence of the finer features found only in the Standardaire Blower.

The Standard Stoker Co., Inc. Dept. C-22—370 Lexington Ave., New York 17, New York.

THE STANDARD STOKER CO. • INC •

Standard Stoker SSS

NEW YORK • CHICAGO • ERIE • MONTREAL

▼ PRODUCTS—Identified by IEN-12114 ▼

LAYOUT . . Protractor table for pattern and machine shop use

Source: SPO INC.
6452 Grand Division Ave., Cleveland 5, Ohio

No. 30 is a new rolling hand operated protractor table, with table measuring 30 in. across the circular table top. The circumference is marked off in ½ deg. graduations around the magnetic circle. The graduated glass is degrees between horizontal and vertical.

Tilting action is by turning a handwheel in either ½ turn or more and gear. Vernier on both the table and the tilt quadrant provides for readings to ½ min of arc. Handwheel is rubber

---

▼ PRODUCTS—Identified by IEN-12115 ▼

PAINTING . . Color specked enamel for product and interior finishing

Source: UNITED LACQUER MFG. CORP.
1003 W. Elizabeth Ave., Linden, N. J.

Color combinations to specification

Midtal also

▼ PRODUCTS—Identified by IEN-12116 ▼

METER . . Electronic instrument reads volts, current and resistance

Source: CHICAGO INDUSTRIAL INSTRUMENT CO.
534-38 W. Elm St., Chicago 10, Ill.

List price is $38

All Makers of Tools And All Other Products Are Listed In THOMAS REGISTER . . Description . . Ratings . . See Page 16

▼ PRODUCTS—Identified by IEN-12117 ▼

New! Low-Cost! Wide-Range!

VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A NOBLE COURT • CLEVELAND 13, OHIO

▼ PRODUCTS—Identified by IEN-12118 ▼

NOW! REDUCE MATERIAL COST

BUT GET PERFECT STAINLESS PROTECTION

with PERMACLAD

STAINLESS CLAD STEEL

PERMACLAD combines the surface characteristics of stainless steel with the forming qualities of carbon steel. It permits you to improve your products, provide corrosion resistance and cut forming costs. You can cold form PERMACLAD with more—reduced R to deeper draws without intermediate annealing—actually form items product impossible with many other materials.

Hundreds of products from chemical and food processing equipment to automotive bumpers and show cases are being fabricated from PERMACLAD. Write for more information and FREE 8 page technical data folder P-4.

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

▼ PRODUCTS—Identified by IEN-12119 ▼

Exteriors are completely protected from weather and humidity. Colors are a choice of pastels and bold modern. Maintenance is simplified and economical.

Interiors are beautiful because paints based on VINYLITE Resins can be tinted to practically "custom color" shades. They can be applied directly to fresh plaster.

WALLS WINK AT WORK AND WEAR

. . . finished with coatings based on VINYLITE Resins

There's a job and market waiting for you to deliver coatings known as VINYLITE Brand Resins. These amazing formulas have proved themselves under the toughest service conditions, indoors and out. They're saving time and money right now in such diverse fields as construction, petroleum, marine, and transportation.

The reason: *These coatings offer a unique combination of physical and chemical properties.* They are easily applied by conventional equipment—and they stay put for years and years on iron, steel, aluminum, concrete or masonry. Odorless, tasteless, they are highly resistant to almost all chemicals, salt, greases, oils and alkalies. They will not support combustion . . . have greater abrasive resistance than conventional paints. VINYLITE Resins have a place in your future formulations. Discover how they can be put to work for you. Get all the facts now. Write Dept. IT-1.

Union Carbide and Carbon Corporation
Chemicals Division
C.P. Box 1086 Boston 103, Mass.

Vinylite BRAND **RESINS**

BAKELITE DIVISION

BAKELITE DIVISION
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

▼ BRIEFITS—Identify by IEN-12121 if you write the maker ▼

CRANE quality fittings for welded pipe lines

LEAKPROOF . . . MAINTENANCE-FREE . . . EASY TO INSTALL

STEEL BUTT-WELDING FITTINGS—Made for standard, extra strong, and double extra strong pipe. Maximum capacity assured by greater strength, economical in piping strains, and easy installation. A complete line for pipe sizes from ½ to 24 inch.

STEEL SOCKET-WELDING FITTINGS—Forged of high grade Carbon and Carbon Molybdenum steel, or machined from high-grade, ST standard and extra strong weights for fitted up to 4 in. Dry socket makes well. Knurling points out dark markings, if necessary. To 1000 psi. steam and water. Pressed W-0111 repair and for corrosive lines up to 1000°F.

FORGED STEEL WELDING FLANGES—Welding Neck Flanges and Screwed Flanges available in full range of sizes in all pressure classes. Drilled and faced for all services and gasket types. Investigate Screwed Flanges for low-pressure equipment work.

SEE YOUR NO. 49 CRANE CATALOG

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill. Branches and Wholesalers Serving All Industrial Areas

CRANE Everything for Every Piping System

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

▼ BRIEFITS—Identify by IEN-12122 if you write the maker ▼

Saves Time on light and HEAVY Work

250-Watt WELLER SOLDERING GUN

You need no other soldering tool. It is ready to bring new time-saving job. Heat is instantly on . . . instantly off with trigger-switch control. Power and heat never get the time. Write for a free trial.

- TRIGGER SWITCH CONTROL—No need to unplug gun.
- 5 SECOND HEATING—No waiting.
- WELLERTIP—Rigid and hooked for heavy duty.
- SOLDERLITE—Performance spotlight.
- LONGER REACH—Gets into tighter spots.
- DUAL HEAT—Single heat 250 watts, dual heat 200/250 watts, 110 volts, 60 cycles.

Order your 250-watt Weller Soldering Gun from your distributor today, or write for bulletin direct.

WELLER ELECTRIC CORP. 111 Parker Street, Easton, Pa.

SOLDERING GUIDE—Contains new points of soldering. Free copy upon request. Write today.

▼ BRIEFITS—Identify by IEN-12123 if you write the maker ▼

Where "SMALL WORK" GRINDING JOBS are concerned Depend on Foredom

FLEXIBLE SHAFT MACHINES for TOP PERFORMANCE VERSATILITY and SPEED!

Quality Tested Since 1922

Model 9050 ONLY $29.60 COMPLETE with 6-STEP FOOT RHEOSTAT and PENCIL-SIZE HANDPIECE

Bench and Hang-Up Models, also models like Model 9000 "Universal" which can be used as Bench or mounted under Bench & Handpiece types, provides wide range, all with quick detachable features. Extra good flexing qualities provide utmost freedom of movement in handpiece.

Foredom are available, complete or as chuck assemblies—Production Tooling and Machinery.

See Your Industrial Supply Distributor. If he cannot supply you write to us. Mail coupon for catalog.

FOREDOM ELECTRIC CO. Dept. N-E-27, 27 Park Place, New York 7, N. Y.
Send your catalog No. N-E-27 showing Bench and Hang-Up Models and Flexible Shaft Machines. Name, Address, City & Zone, State.

▼ BRIEFITS—Identify by IEN-12124 if you write the maker ▼

TRUCK . . Power lift fork design, interchangeable uprights, 2½, 3 ton

Source: BAKER-RAULANG CO. 1248-52 W. 80th St., Cleveland 2, Ohio

Type FT-30 and FT-40 are interchangeable between a set for high lift or with the 30 Type mast to obtain low lift approximately 30 to 40 in. for low cut and stacking. Change can be made in 20 minutes. Mast racks can be turned in or out, converting a stow and tier machine into a high stacker, turn in or out, for tier and stack.

The operator rides on a padded seat (Type 1 engineering seat on the left hand side shown in stowed or tier position). Self-operated pedal. Operator is seated and the lift and tilt controls are within easy reach. Operator dismounts when the truck is in motion, handles a standard steering arm which swings to left when dismounted.

Lift system. The operator brake is also applied to act on the power shaft. An electric interlock between brake and mast prevents lift and tilt.

Travel and hoist motors are the company's Design for industrial duty trucks. The motor drives power side in the same as equipment in the line of trucks over many years. The steering arm is cast iron, hydraulic type mounted on rubber bushes and pivoted longitudinally to operator seat, motion transmitted. This machine hoists, carries, and pivots pipe bundles.

▼ BRIEFITS—Identify by IEN-12125 if you write the maker ▼

HEAT TREATING . . Gas fired furnace for batch heating and quenching cycle

Source: HOLCROFT & CO. 6565 Epworth Blvd., Detroit 10, Mich.

New furnace is available in specifications from 10 to 1000 cu. ft. capacity, work quarter-size to approximately 12 cu. ft. Design is a modified of conventional open-type, with the chamber and the quench tank mounted on the same frame. The quench tank is "hot" position ready for the charge to remove the completed load and to replace it with one.

The burners provide heat for the unit, which is supplemented by the heating of a power driven fan in the furnace roof. Electric heat can be supplied in place of the gas. The atmosphere is supplied by equipment that complies with the Hydrogen Gas Code. It is a complete unit that requires only the gas and electric connections.

All Makes of Floor And All Other Products Are Listed In COMPLETE REGISTER — Descriptions — Ratings — See Page 50

▼ BRIEFITS—Identify by IEN-12126 if you write the maker ▼

FOR FASTER-EASIER DRILLING IN MASONRY

ONLY Gold twist CARBIDE TIPPED DRILL BIT has these 6 advantages

1. DOUBLE "DUST-EXITS"
   Each carbide cutting edge forces the dust into its own built-in spiral and which instantly and effectively conveys it out of the hole.
2. NO "CARBIDE-HANGOVER"
   The Special Steel Body has the same diameter as the carbide which means support to dust exit plus maximum carbide support and drill strength.
3. No cleaning of holes.
4. Lowest cost per hole.
5. Uniform drilling rate.
6. Accurate holes with less effort.

Ask your jobber, or write for illustrated folder.

Used in Rotary Drill Hand Brace Drill Press

New England CARBIDE TOOL CO., INC. 164 Brookline St., Cambridge 39, Mass.

▼ BRIEFITS—Identify by IEN-12127 if you write the maker ▼

We have the answer TO YOUR SURFACE FINISHING PROBLEM!

Some of the Products Our Machines Now are Finishing

- Screw drivers, chisels, pliers, saws, wrenches
- Flatware—knives, forks, spoons
- Cigarette cases and lighters, compacts, mirror and brush backs
- Surgical instruments
- Fan blades, flat iron sole plates, photogravure stock

For flash removal to mirror finish . . . a Clair Surface Finishing Machine may be the economical solution to your small product finishing problem. From the seven extremely versatile basic designs, a "custom-made" machine may be developed for your particular application. Write for technical data.

CLAIR MANUFACTURING CO., INC. Specialized Machine Equipment For Sawing and Polishing Operations. OLEAN, N. Y.

▼ BRIEFITS—Identify by IEN-12128 if you write the maker ▼

WHAT PROPERTIES DO YOU REQUIRE IN ELECTRICAL CONTACTS?

- Ability to withstand severe arcing.
- Low and uniform contact resistance.
- Non-welding of contact surfaces.
- High thermal conductivity.
- Resistance to mechanical wear.
- Self-lubricating properties.

CONSULT Gibson FOR THE MATERIAL TO BEST MEET YOUR REQUIREMENTS

Gibson engineers have wide experience in the design and application of contacts . . . and a wide range of Gibson materials from which to select the one having the optimum combination of characteristics for each application.

Gibson contact materials include:

- GIBSILOY Powdered Metal Compositions, including silver or copper combined with refractory materials such as tungsten, molybdenum, nickel, and graphite.
- SILVER ALLOYS, including silver alloyed with copper, cadmium, palladium, or platinum.
- FINE SILVER
- PALLADIUM

Send us your problem or write for contact application questionnaire

Gibsiloy ELECTRICAL CONTACTS Manufactured by GIBSON ELECTRIC COMPANY 5555 Frankstown Ave., Pittsburgh 21, Pa.

Representatives in Boston, Chicago, Detroit, New York, Rochester, N. Y., Los Angeles, San Francisco, Seattle.

▼ BREFITT—Identify by IEN-12130 if you write the maker ▼

A FAST WAY TO REDUCE COSTS

Capacities from ½ to 1 ton
110, 220 or 440 volts

Hundreds of plants are nothing overloaded with the CM COMET . . . a sturdy, high-speed, dependable electric hoist. All working parts fully enclosed and permanently lubricated. Don't buy until you see the CM COMET. Ask your local distributor for a demonstration.

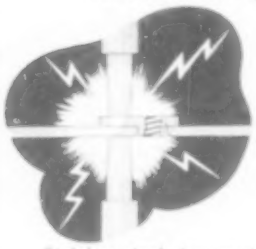
Write for Bulletin 138 Get all the facts

CHISHOLM-MOORE
HOIST CORPORATION
(Affiliated with Columbus McKinnon Chain Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland • San Francisco • Los Angeles

▼ BREFITT—Identify by IEN-12131 if you write the maker ▼

OHIO WELD NUTS

For economical Spot Welding



Ohio
SN Spotweld
Nuts

No retapping required
Thread sizes in stock,
(Low Carbon Steel)
No. 6-32 to ⅜-24

Stainless steel sizes made to order in production quantities.

For dependable Projection Welding

Ohio
WS Square Weld Nuts
Thread sizes in stock.
(Low Carbon Steel)
No. 6-32 to ½-20
No retapping required!
No burning or discoloration!

For samples and welding information, send to

THE OHIO NUT & BOLT COMPANY
604 FRONT STREET BEREA, OHIO

▼ BREFITT—Identify by IEN-12132 if you write the maker ▼

NOW!

AN *Automatic* TUBE BENDER UNDER $2,000

BEND-EX
AIR COMPRESSION TUBULAR BENDING MACHINE

that will make Over
900 PRECISION BENDS PER HOUR

Adaptable to All Bending
round, square, rectangular—pipe, light angles, channels, solid bars, etc., for:

- FURNITURE
- AUTOMOTIVE
- AIRCRAFT
- PLUMBING
- AIR CONDITIONING
- REFRIGERATION

WRITE FOR FREE LITERATURE

PAUL MACHINE TOOL & DIE WORKS
4600 S. Kedzie Dept. B-1
CHICAGO 32, ILLINOIS

▼ BREFITT—Identify by IEN-12133 if you write the maker ▼

PACKAGING . . Automatic equipment makes bags, then fills and seals them

Source: BARTELT ENGINEERING CO.
315-19 S. Madison, Rockford, Ill.

Illustrated is a representative example of the company's new line of packaging machines for liquids, powders, solids, multiples and special items. Each is special for the given purpose and production capacity as specified. Each is an assembly of standardized components to which the Bartelt machine makes a bag from a roll of stock, or bag material, opens it, fills it, passes it through the filling stations and then closes and seals it. The machine will handle paper, foil, laminated or cellophane products, single and multiple bags.

Adjustments are included for size, temperature, in the heat sealer and product variation. The machine shown, number two bagger, will fill, close, seal and continuously feed bags from stock. Many screws, ice cream mix, peanuts, citrus, confections, pickles and lotion powder, bagged are a few of thousands of items that can be packaged. The company is prepared to make a comprehensive study of a prospective user's products and recommend equipment for it.

▼ BREFITT—Identify by IEN-12134 if you write the maker ▼

CONTROL . . Electronic equipment regulates variables in a process

Source: LEEDS & NORTHRUP CO.
4924 Stenton Ave., Philadelphia 44, Pa.

Temperature, pH, chemical concentration, flow, gas analysis are representative variables that can be regulated and held to close limits by this and other Series 60 P.A.T. control equipment. It offers from pneumatic equipment for by the company, in addition to controller, a complete line of electronic equipment.

Three elements make up the system. They include the company's Measuring Equipment, including the new control controller and the sensor, some accessory for the valve or other element that makes various corrective adjustments in terms of a flexible and long-lasting control such as a Series control, conductivity or gas analysis cell, pH electrode. The company has prepared illustrated information which is available on request. Write or by Dept. 6 the number above.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

▼ BREFITT—Identify by IEN-12135 if you write the maker ▼

DOR-TITE by DURKEE-ATWOOD **KEEPS IT DUST-TIGHT**

The Day Company, Minneapolis, outstanding producers of dust filters, depends on Dor-Tite for gasketing between metal-to-metal joints on every unit. This soft, resilient tubular rubber strapping seals a dust-tight and air and moisture-tight joint. Installed in exact size needed, Dor-Tite needs no trimming, applies swiftly, helps cut production costs.

Dor-Tite Strapping is available in 18 colors, widths, thicknesses, up to 3 inches in specified lengths.

DURKEE ATWOOD COMPANY
Dept. 56, Minneapolis 13, Minn.

▼ BREFITT—Identify by IEN-12136 if you write the maker ▼

CABLE CONNECTORS HOLDERS GROUND CLAMPS CLEANING TOOLS SANDERS HELMETS and LENSES HELMETS GOGGLES and EYE SHIELDS CABLE CONNECTORS PROTECTIVE CLOTHING CABLE

ACCESSORIES FOR *BETTER* WELDING

Here, in one complete line, is the cream of the crop in welding accessories . . . holders, helmets, connectors, cleaning tools, cable and protective clothing . . . selected to provide top-most performance and to give you safety, speed and lower cost in your welding operations.

Write for latest literature—or contact your Murex representative.

METAL & THERMIT CORP.
100 EAST 42nd St. NEW YORK 17, N. Y.

NEWARK PHILADELPHIA PITTSBURGH CLEVELAND
E. CHICAGO, IND. MINNEAPOLIS SO. SAN FRANCISCO

▼ BREFITT—Identify by IEN-12137 if you write the maker ▼

NOW THE MOST VERSATILE OPTICAL COMPARATOR YOU CAN BUY

Kodak Contour Projector Model 2

It handles large parts. There's 6⅞ inches from lamphouse to object and 8 inches from object to lens—*at all magnifications*. From lamphouse pivots to make room for long objects under surface illumination. Vertical travel is 4 inches.

It gives surface illumination in any of 5 planes, and switches instantly from surface illumination to silhouette projection, or to a combination of both. Instant dialing to any of 6 magnifications from 10× to 100× without distortion. The 14-inch screen is extra bright, no hoods or curtains needed—even in fully lighted rooms. Designed for all-day operator comfort, yet built to precise toolroom standards.

May we show you the savings it can make on your own inspection problems?

EASTMAN KODAK COMPANY
Industrial Optical Sales Division
Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR SHOWS contours, of course / surface details . . . / deep, blind holes

Kodak
TRADE-MARK

▼ PREFIX—(Identify by) IEN - 12139 (If you write the maker) ▼

You can do a lot

with a little GOLD SEAL TAPE

JENKINS Gold Seal Tape
FRICTION . . . RUBBER

MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

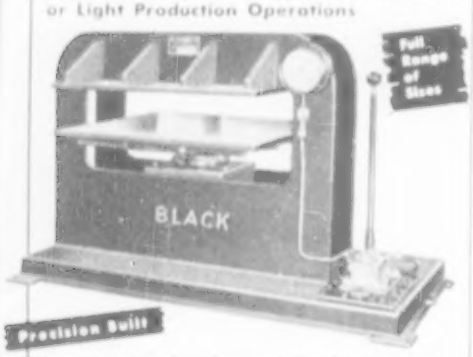
▼ PREFIX—(Identify by) IEN - 12140 (If you write the maker) ▼

BLACK BROTHERS

HAND OPERATED . . .

HYDRAULIC LAMINATING PRESS

for Laboratory and Experimental Work or Light Production Operations



Sturdily made of modern steel plate I-beam construction, this press will offer years of excellent service. Vacuum may be had in the width of platen, vertical opening, length of stroke, and total pressure applied. Write for literature.

THE BLACK BROTHERS CO., INC.
MENDOTA, ILLINOIS, U. S. A.

▼ PREFIX—(Identify by) IEN - 12141 (If you write the maker) ▼

TIME-MONEY SAVING
Accuracy

AT YOUR FINGERTIPS

A tool for your bench . . . Starrett Drill Stop. Pin finger. Unlimited time and cost saving advantages in center and location finding, holes or slot singing.

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▼ BRIEFITS—ideas by IEN-12150 if you write the maker ▼

Modern as tomorrow!

New Wheeler RLM "Industri-Line" Slimline Fixtures

1. High Output
2. Latest G. E. Turret Type Lampholders (depressable); for single-pin contact
3. Reflectors in Sections
4. Individual or Continuous Mounting
5. One-piece Top Channels heavy gauge steel
6. For 2 or 3 T-12 Slimline Single-Pin Lamps. Instant starting

For complete information write Wheeler Reflector Co., 275 Congress Street, Boston 10, Massachusetts

Wheeler REFLECTOR COMPANY

Lighting Equipment Specialists Since 1881

▼ BRIEFITS—ideas by IEN-12151 if you write the maker ▼

U. S. ROYALITE TOTE BOX which both STACKS and NESTS

CONSULT THESE EXPERIENCED FABRICATORS OF ROYALITE

The United States Rubber Company at 2638 North Pulaski Road, Chicago, Illinois, has complete Engineering, Designing, and Styling Departments to assist fabrication on the technique to employ, and in the art of fabricating most efficiently with ROYALITE.

NEWS NOTES—Continued

"Booklet describes continuous casting process"

▼ BRIEFITS—ideas by IEN-12153 if you write the maker ▼

BRAZING . . . How to design joints for braze assembly detailed in booklet

Drawings which show basic joint designs for tool and circuit assemblies, examples of good and poor design, are part of the 20-page booklet on new 24-page Formica Br. Tool supplies engineering design, shows how assembly advantages, brazing techniques and basic supplies, designs simple or automatic brazing methods. Illustrations of component joints. A table lists filler and other specifications corresponding to 54 of the company's materials. We like the brief technical notes of each current. Comparison is impossible to indicate actual between surfaces and so that which takes place in brazing.

▼ BRIEFITS—ideas by IEN-12154 if you write the maker ▼

BRONZE . . . Made by continuous casting, booklet details manufacture, properties, alloys

Schematic drawing on page 10 of the booklet "Advance Cast Bronzes" shows how the continuous casting process takes place in from a pool of molten alloy. The Ca-Ca-Ca-

▼ REPRINT—(detail) by IEN - 12161 if you write the maker ▼

Wide *or* Narrow...

C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheet steel, C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin U-B gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

CULLEN-FRIESTEDT CO.
1380 South Kilbourn Avenue • Chicago 23, Illinois

▼ REPRINT—(detail) by IEN - 12162 if you write the maker ▼

NEW FREE BULLETIN

on Arktite circuit-breaking plugs and receptacles

Here's a new 16 page bulletin designed to save you time when ordering circuit-breaking plugs and receptacles.

In concise, tabular form one describes, catalog number, and list price not only of plugs and receptacles, but conduits, adapters, conduit hub plates and associated items.

Arktite plugs and receptacles are circuit-breaking and safe without additional disconnect equipment. They are made by Crouse-Hinds—the company that offers the only complete line of circuit-breaking plugs and receptacles, 20 amps. to 100 amps., 250 volts DC, 600 volts AC, as well as a complete line of conduit-type fittings.

Get your copy of this time-saving bulletin! Just fill in and mail the coupon below. Graybar Electric Company, Inc., Executive Offices: Graybar Building, New York 17, N. Y.

IN OVER 100 PRINCIPAL CITIES

Graybar Electric Company, Inc.
Graybar Building
New York 17, N. Y.

Please send me my copy of the new free bulletin on Arktite circuit-breaking plugs and receptacles.

Name Title
Company
Address
City Zone State

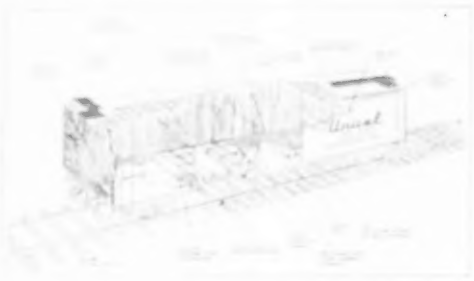
NEWS NOTES—Continued

"Plywood car for railroad service"

▼ REPRINT—(detail) by IEN - 12164 if you write the maker ▼

CAR . . . Made of plywood for railroad use, features light weight

Frozen food car corp.
630 N. Michigan Ave., Chicago 2, Ill.



"Uniref" designates new railroad freight car made of plywood in monocoque construction. It is molded into a single piece by high-frequency heating so the entire structure absorbs and distributes shock and stresses. Interiors are smooth, corners are rounded, doors are two feet wider than standard refrigerator cars, insulation is optional, provision for strapping is included.

Construction details and features are set forth in detail by new 32 page booklet, "Uniref—The Freight Car of the Future—Today". The booklet also reviews the cold wall construction in the refrigerator design of the new car.

▼ REPRINT—(detail) by IEN - 12165 if you write the maker ▼

CONTROLS . . . For building heat the subject of new assembly of design information

Barber-Colman Co.
Office & Rock St., Rockford, Ill.

An 8 page bulletin and a set of 11 data sheets comprise new assembly of useful information on control of building heat for unit-type systems. Bulletin F-5107A describes selection of outdoor point control, accessories models, presents a ratio selection table. Each data sheet describes a specific application for master or a schematic diagram. Controls are shown, operation is summarized, wiring diagrams are illustrated on a variety of installations and control equipment.

▼ REPRINT—(detail) by IEN - 12166 if you write the maker ▼

ELECTRONIC PRODUCTS . . . Tube manual presents information on some 460 receiving tubes

Radio Corp. of America
RCA Tube Department, Camden, N. J.

New edition. No. RC-16, is announced for the company's receiving tube manual. It has 324 pages, lists at 50 cents. In addition to revised information on the tubes, the new edition contains expanded information on tube and circuit theory, new circuit designs, new application data. A feature of the new edition is a binding which allows pages to open flat.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 56

▼ REPRINT—(detail) by IEN - 12167 if you write the maker ▼

HONEYWELL MERCURY SWITCH PRICES ARE DOWN!

ACTUAL SIZE

ASA6000, 1 amp., SPST 1½" x ⅞" $0.125

ACTUAL SIZE

ASA6001, 1 amp., SPST 1½" x ⅞" $0.175

Prices are for standard quantities of 100 and up. Type number indicates switch with leads, number ending in 1 includes leads.

Write for complete catalog, or for immediate action, call your Honeywell branch office nearest you.

Minneapolis-Honeywell Regulator Co., Inc., Industrial Division, 1616 Walnut St., Philadelphia 13, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell
MERCURY SWITCHES

▼ REPRINT—(detail) by IEN - 12168 if you write the maker ▼

OZITE all hair felt has an outstanding record for solving problems of cushioning, padding, thermal and sound insulation. Our research and engineering staff are ready to give you competent assistance should you have any problems in these or similar applications.

OZITE felt in standard weights and thicknesses meets most production requirements. Special weights and thicknesses, as well as paper, cloth, or foil backings and stitched reinforcements may be had in production quantities.

Write today for OZITE bulletin No. 1500. If you desire samples for test, simply send a brief description of your application.

AMERICAN HAIR & FELT CO.
Dept. X5012, Merchandise Mart Chicago 54, Illinois

▼ REPRINT—(detail) by IEN - 12169 if you write the maker ▼

NOW a Cowles DISSOLVER with Water-Pressure Hydraulic Lift

Designed for operations where it is cheaper and easier to process materials or containers brought to the machine. The impeller of this Cowles Dissolver raises or lowers by hydraulic pressure from the water mains.

BRIDGE SWINGS 360° . . . For continuous operation, while processed containers are being removed, the bridge carrying the impeller swings through a complete circle of 360°, progressing from one container to another without interrupting the work flow.

TWO MODELS COVER WIDE RANGE

MODEL 20D-2H . . . Suited for motors up to 40 horsepower, will produce its maximum efficiency in containers from 24" to 84" in diameter.

MODEL 30D-1H . . . Designed for motors up to 15 horsepower at 1800 rpm. Intended for a 60" or 48" and containers ranging in diameter from 12" to 48".

BOTH MODELS . . . Can be had with explosion proof motors, and with variable speed. V belt drive for handling materials of widely different flow characteristics and viscosities.

Write us now, and we'll tell you more of details to why the Cowles Dissolver is your Dissolver.

2 to 20 Times Faster in Dissolving or Dispersing
Gum Solutions — Resins
Nitro-cellulose
Lacquers — Enamels
Paints — Emulsions
Coatings — Inks
Explosives — Plastics
Various Chemicals

The Cowles Company
INCORPORATED
1112 TRACKSIDE, CAYUGA, N. Y.
Associates: Shartle Bros. Machine Co., Division of Black Clawson Co., Middleton, Ohio. Alexander Fleck Ltd., Ottawa, Ont.

▼ REFER IT—Identify by IEN - 12171 if you write the maker ▼

WIRE CLOTH tailored to your needs

Whatever your specific requirements may be in wire cloth, you can count on Cal-Wic for the right mesh, gauge and weight to meet your job demands. Cal-Wic Industrial Screens are also supplied in special mesh and colors to resist corrosion, abrasion and high temperatures.

Next time you order wire cloth take advantage of our 50 years experience. Write for illustrated, descriptive catalog.

CAL-WIC INDUSTRIAL SCREENS

IN THE EAST—WICKWIRE SPENCER STEEL DIVISION • Clinton, Massachusetts
IN THE WEST—THE COLORADO FUEL & IRON CORP. • Denver 2, Colorado
ON THE PACIFIC COAST—THE CALIFORNIA WIRE CLOTH CORP. • Emeryville, Calif.

▼ REFER IT—Identify by IEN - 12172 if you write the maker ▼

SPECIALIZING IN ORIGINAL EQUIPMENT LOCKS

ILLINOIS

CABINET LOCKS

Hundreds of styles and sizes in cabinet locks for wood or metal installations available for original equipment applications.

Illinois lock engineers are always ready to cooperate with you in working out special locking problems.

For a complete service of your next lock problem—call Illinois.

DUO LOCKS—Finest in lock quality—practically unlimited key specification—virtually pickproof—non-duplicatable style keys.

ILLINOIS LOCKS—Famous prize cylinder locks—many key changes—non-structural metals failure due to dirt or freezing.

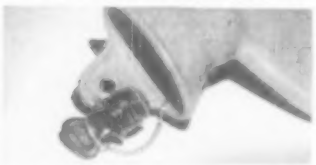
ILLINOIS

THE ILLINOIS LOCK COMPANY

872 SOUTH ADA STREET • CHICAGO 7, ILLINOIS

▼ REFER IT—Identify by IEN - 12173 if you write the maker ▼

Kinkless Safeguard for Removable Parts



If your product has removable parts which can be mislaid, dropped and broken, or lost, add usefulness and sales appeal at negligible cost by securing these parts with Bead Chain. Bead Chain provides the ideal safeguard for caps, covers, hasp pins, wedges, alarm hammers and other important parts. Strong, light, rust-proof, completely flexible, it cannot kink, bind or jam. Free swivelling action makes Bead Chain especially adaptable for screw-type parts. Made in five bead sizes, and in all metals and finishes. Attachments available for every need. For the finest retainers specify Bead Chain.

THE BEAD CHAIN MANUFACTURING CO.
59 Mountain Grove St., Bridgeport 5, Connecticut

Manufacturers of BEAD CHAIN—the standard chain of a thousand uses for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products. MULTI-SWAGE—the most economical method of producing close-tolerance metal parts for electronic and mechanical applications.

NEWS NOTES—Continued

"How to apply conductive silver coatings"

▼ REFER IT—Identify by IEN - 12174 if you write the maker ▼

COMMUNICATING . . . How two-way radio is used in the petroleum industry for instant communication

General Electric Co.
570 Lexington Ave., New York 22, N. Y.

Booklet X33-837 is an 8-page publication that describes how two-way radio communication is employed in the petroleum industry. It covers general uses, types, operation and ranges, showing approximate cost. Typical units are illustrated.

▼ REFER IT—Identify by IEN - 12175 if you write the maker ▼

CONDUCTORS . . . Application instructions for conductive silver coatings on plastics

Metacoat Co.
205 W. 29th St., 4th Fl., New York 11, N. Y.

Section 51 designates new 4-sheet set of instructions on how to apply conductive silver coatings over plastics and other non-conductive materials. Information covers types available, solvents, equipment employed, application technique, plating.

▼ REFER IT—Identify by IEN - 12176 if you write the maker ▼

ELECTRONIC PRODUCTS . . . Booklet on magnetrons describes how they work and operating precautions

Sylvania Electric Products Inc.
1740 Broadway, 16th Fl., New York 19, N. Y.

Magnetron operation is the introductory section in new 32-page booklet, "Magnetrons." Bulletin EO-87-A. Schematic drawings and text describe basic principles. Tables, drawings and diagrams cover the company's standard units. At the rear is a list of points to watch in handling and operation.

▼ REFER IT—Identify by IEN - 12177 if you write the maker ▼

FASTENINGS . . . House publication describes use of fastenings from spectacles to bridges

Industrial Fastener Institute
3966-10 Euclid Ave., Cleveland 15, Ohio

Current issue of "Fastener", house publication of the Institute, has a lead article on use of high-strength structural bolts in steel railway bridges. Other articles cover international fastener standardization, for 30-year operating best load congestion curves, use of automatic rivet rivets in the UN building. You can receive the publication upon request.

▼ REFER IT—Identify by IEN - 12178 if you write the maker ▼

FLOORS . . . House publication of news and uses for emery concrete aggregate

Boston Grinding Co.
50 East 42nd St., New York, New York 17, N. Y.

"Emeri-Crete News" is a quarterly newsletter bound in typewriting form. It tells about new or unusual installations of concrete floors employing the company's emery aggregate, describes helpful engineering information, illustrates production. Your name will be added to the mailing list.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 30

▼ REFER IT—Identify by IEN - 12179 if you write the maker ▼

TOUREK

BALL JOINTS • PIPE PLUGS AND QUALITY SCREW MACHINE PRODUCTS

LITERATURE

TOUREK

"THE BEST IN QUALITY SCREW MACHINE PRODUCTS"

ESTABLISHED IN 1900

▼ REFER IT—Identify by IEN - 12180 if you write the maker ▼

NEW simple accurate versatile Odee-HONE

For honing all types of External Cylindrical Surfaces. A single tool for all parts from ½" to 2½" in diameter.

GENERATES ACCURATE SIZE, ROUNDNESS, STRAIGHTNESS, AND FINISH ON

Spindles	Pistons and	Test bars
Shafts	piston rods	Die pins
Guide pins	Rollers	and
and bars	Plungers	similar parts

For complete information write or call—

MICROMATIC HONE CORPORATION
8100 Schoolcraft Avenue · Detroit 4, Michigan

▼ REFER IT—Identify by IEN - 12181 if you write the maker ▼

Tied Right . Tied Tight . . . with GERRARD!

Of course, you're working with bad materials with Gerrard Round Steel Strapping. Fragmented along with 5 round steel strapping is equal with Gerrard's Automatic Machine which requires fine tool with strapping and tells exactly on your operation.

NO MATTER WHAT YOU'RE TYING . . . from small parcel post packages to heavy pulpwood and cardboard bales of steel and iron and glass . . . there's a Gerrard machine and set of strings to help you improve your strapping operations.

Ask a Gerrard engineer. He is equipped to give you expert advice, the facts about the Gerrard method of strapping and the reasons why Gerrard Round Steel Strapping costs more for . . . but does more when useful reinforcement. He's a good man to talk to about strapping.

Write for a free copy of your Book of Packaging Ideas. It's full of ideas for better packaging.

Gerrard Steel Strapping Company, 4701 So. Richmond Street, Chicago 32, Illinois

USS

GERRARD ROUND STEEL STRAPPING

UNITED STATES STEEL

▼ REFER IT—Identify by IEN - 12182 if you write the maker ▼

DIAMOND CHAINS Help Band Frankfurters

Diamond 2A6 Roller Chain on International Banding Machine, with special attachments for handling frankfurters.

The adaptability of Diamond Roller Chains has been well established—for transfer of power from motor to main shaft, from shaft to shaft and with various types of attachment links for packaging and conveying operations.

Whatever your application Diamond Chains will simplify operation and maintain top production speed. Our engineering staff is ready to make practical suggestions. DIAMOND CHAIN COMPANY, Inc., Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Indiana.

Offices and Distributors in all Principal Cities

Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER.

Write today for Chain and Stock Sprocket Catalog 709

DIAMOND **ROLLER CHAINS**

▼ REPRINT—Identify by IEN-12183 if you write the maker ▼

Incorporating Fafnir Wide Inner Ring Ball Bearing with Self-Locking Collar

Simple, low-cost housing also. Eliminates costly one-bolt mounting, simplifies maintenance. Pair of pressed steel flanges bolts to any part of machine, provides lightweight, compact, sturdy housing for standard Fafnir Wide Inner Ring Ball Bearing. Fafnir Machines Seals both sides. Self-alignment during installation. Write for illustrated folder. The Fafnir Bearing Company, New Britain, Connecticut.

FAFNIR BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

▼ REPRINT—Identify by IEN-12184 if you write the maker ▼

A compact decorporary, simple or operated Oil Hydraulic Press with only 3 moving parts. Both stroke and pressure can be accurately regulated. Nine varying hydraulic pressures are uniformly applied and not affected by stick-slip factors. Does eliminating breakage. (3) and 3 ton capacity.

Write today for Circular 140.

HAPCO HY-AIR PRODUCTS CO.
DETROIT, MICH.

▼ REPRINT—Identify by IEN-12185 if you write the maker ▼

O.K. GANG SLITTER KNIVES
for longer service

O.K. ROTARY SHEARS & BLADES
for maximum toughness

The OHIO KNIFE Co.
CINCINNATI 23, OHIO, U. S. A.

CLIP AND MAIL TODAY

THE OHIO KNIFE CO., CINCINNATI 23, OHIO
Gentlemen: Please send without obligation specific data on blades I have checked.
☐ CIRCULAR KNIVES ☐ ROTARY SHEARS
COMPANY
NAME
ADDRESS

NEWS NOTES—Concluded

"How to judge grinding performance"

▼ REPRINT—Identify by IEN-12186 if you write the maker ▼

GLASS . . . Bibliography of 88 pages prints references to articles on glass fibers

Chemical Publishing Company, Inc.
Kingsport, Tenn.

Third Edition of the "Glass as Engineering Material" lists 11 references to articles in 224 publications. These references are grouped by generic subject such as manufacture, thermal properties, electrical, mechanical properties, chemical properties, resistance, uses, and general applications.

▼ REPRINT—Identify by IEN-12187 if you write the maker ▼

GRINDING . . . How to judge performance of a grinding wheel told by house publication

Norton Company
Worcester, Mass.

September issue of "Norton Jobs Grinding" has one in series of articles on grinding titled "How to Judge Grinding Performance." It includes characteristics of grinding performance, grinding wheel components, and performance, stopping wheel performance, a table of the wheels it's heard about, and a glossary.

▼ REPRINT—Identify by IEN-12188 if you write the maker ▼

HANDLING . . . Suggestions on use of wire rope slings printed on pocket card

Macwhyte Co.
Racine, Wis.

One side of card is a 3-ft. 3-in. card Part No. 3026 gives five commonly used slings and one of more than slings. The other side shows rope fittings, as how to hang slings, OD rope, general care, protection from sharp corners. Copies of the card will be sent upon request for the asking.

▼ REPRINT—Identify by IEN-12189 if you write the maker ▼

HEAT TREATING . . . New house publication on gas-burning heat treating equipment and uses

Surface Combustion Corp.
Toledo, Ohio

"Heat Treat Review" is the new publication to be issued periodically by the company. Each issue will be mailed to the heating, use gas engineers. The first issue carries a story on the automatic proportioning furnace, gas chemistry, and the line is mechanical, operating a mixed commercial plant.

▼ REPRINT—Identify by IEN-12190 if you write the maker ▼

IEN ON MICROFILM . . . Your 1950 copies reproduced on microfilm to save storage space

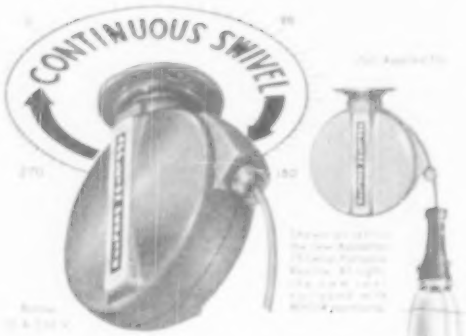
Industrial Equipment News
Chicago, Illinois

You can get a reproduction of all the pages of Industrial Equipment News for 1950 on a roll of standard 35 mm. microfilm, for easy filing, through any standard reading-film enlarger. This service operates on a yearly basis. List price for the set of 1950 IEN copies is about $30.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER — Descriptions — Ratings — See Page 10

▼ REPRINT—Identify by IEN-12191 if you write the maker ▼

▼ REPRINT—Identify by IEN-12192 if you write the maker ▼



It's Here . . . a Great NEW APPLETON REELITE

Announcing the new of Your Appleton "Portable Reelites" with part assembling and take up feed that furnishes light and a flexible power source for electrically operated and wired power tools.

Portable and action bodily used as desired length, and is semi-manually operated when job is done. Instantly reels out 3 ft. retracting motor line. Available with any types of handlamps, machine and accessory tools or lamp sockets. Approved model furnished complete with handlamp. Write for full details.

Sold Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1716 Wellington Avenue · Chicago 13, Illinois

APPLETON
CONDUIT FITTINGS · LIGHTING EQUIPMENT · OUTLET AND SWITCH BOXES
EXPLOSION PROOF FITTINGS · REELITES

▼ REPRINT—Identify by IEN-12193 if you write the maker ▼

Whether your problem is the addition of a single unit or the installation of a complete treatment plant . . . Carter's organization of experienced engineers, trained mechanics and field specialists are at your service.

Our complete line of mechanical equipment for industrial waste treatment, water purification and sewage treatment has been designed, tested and proven for more than a half-century to give top performance.

Specify CARTER with confidence . . . .
SCREEN PRESSURE ★ SCREENING & FEED WATER SEDIMENTATION
AUTOMATIC SEWERS ★ PADDLE AGITATORS ★ SEWAGE PUMPS
WATER & SEWAGE MIXERS ★ PNEUMATIC EJECTORS ★ CHLORINATORS
CHLORINATORS ★ FLOCCULATOR EQUIPMENT ★ DEAERATOR PUMPS
AND MANY CHEMICAL FEEDERS ★ FLOWMEN PRESSURE PUMPS

186 Atlantic Street

R. B. CARTER CO.
HACKENSACK, NEW JERSEY

Call us today — put your problem to OUR engineering department's hands. There is no obligation.

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SECOND NATIONAL
PLANT MAINTENANCE SHOW AND CONFERENCE
CLEVELAND · JAN. 15-18, 1951

FOR Vice Presidents
Plant Managers
Plant Superintendents
Plant Engineers
Maintenance Executives

and for other plant operating men whose job is to select, install, operate, and maintain the equipment and services needed for efficient, low cost production.

Write today for free show registration tickets for yourself and members of your organization.

Address
CLAPP AND POLIAK, SHOW MANAGEMENT
341 Madison Ave., New York 17, N. Y.

BIGGER · BETTER · MORE TO SEE

▼ REFER—Identify by IEN - 12195 if you write the maker ▼

ARE YOU LOOKING FOR BETTER LOCKS AT LOWER COST?

For your security problems, Eagle can give you a practical answer to fit a reduced cost program. We invite your security problems.

The EAGLE LOCK Company
Terryville, Connecticut

America's First Lockmakers...Since 1833

▼ REFER—Identify by IEN - 12196 if you write the maker ▼

CUT LABOR COSTS with *Commander* PRODUCTION TOOLS

Adjustable MULTI-DRILL

★ Drills Up to 8 Holes At 1 Stroke
★ Adjustable to Any Hole Pattern
★ Fits Any Drill Press

You can drill 2 to 8 holes at one stroke of a MULTI-DRILL equipped drill press. Instantly and easily adjusted to any hole pattern . . . compact in design and rugedly built for years of service, thousands of MULTI-DRILLS are cutting costs and increasing output up to 800% wherever metal, wood or plastic are drilled.

Commander **TAPPER**

★ 1 Tapper Handles Taps 0 to ¾
★ Automatically Sensitive . . . Any Operator Can Do Precision Tapping
★ Fits ANY Drill Press

The Tapper that "Thinks for the Operator"

Commander Tappers "think for the operator" . . . automatically stop when taps are dull, overloaded, or when they strike bottom in blind hole tapping, permit faster tapping, better work, even with inexperienced operators. Torque control prevents positive tap protection from 20 to 5 . . . spring clutch eliminates slippage, assures smooth, quiet, easy operation.

ORDINARY CHIPS

CHIP BREAKER CHIPS

New **DRILL CHIP BREAKER**

Get these COMMANDER DRILL CHIP BREAKER benefits now:

• Faster Drilling
• Deeper Holes
• Better Holes
• Longer Drill Life
• Safer, Cleaner Work
• REDUCED DRILLING COSTS

Write for illustrated Circulars on Commander Production Tools. Your nearby Commander Distributor carries the full line—write for his name.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO 24, ILL.

NEWS NOTES—*Continued*

"New set of production incentive posters"

▼ REFER—Identify by IEN - 12198 if you write the maker ▼

MANAGEMENT . . . Incentive posters to stimulate production and inform employees

Six posters are intended to save set-up time, improve production, produce more work, encourage to indicate their offers a three month against punching other requirements, time cards. The other three has with unauthorized free gift, plus thirty, false rumors in the plant or shop.

Overall size is 11 by 14 inches. The posters are printed in one or, preferred, four-color, medium, employ pastel-to commercial such as clock, thick extra pencils, for a certain amount of three-dimensional effect. List price for the set, or $5 individual posters for or $1. Discounts range from 10 to 40 per cent if quantity.

▼ REFER—Identify by IEN - 12199 if you write the maker ▼

NEW PRODUCT . . . Venturi-type booster for pump input available for license manufacture

Not in production but a product the owners claim, having after a lapse of two applications to use venturi-type booster to increase water flow in a pump at high speeds. The unit can be engineered with cast-iron, steel, and, if very rare pumps, monel a nearly light of which field in the applied. Information and performance curves are available.

▼ REFER—Identify by IEN - 12200 if you write the maker ▼

NEW PRODUCTS . . . List of manufacturers looking for new products to make published in book

Company Name
Box No. & Zone Washington 24, D. C.

1951 Edition of the "Green Book" (name is being changed) is being compiled. The book provides information on companies seeking for outside ideas, including the information on patent or licensing, condition. Manufacturers can purchase listings space to 300 what they are looking for in the way of new products, service organizations looking for ideas, one-product experts, etc. The company will be happy to send you information on subscription or listing space.

▼ REFER—Identify by IEN - 12201 if you write the maker ▼

NEW PRODUCTS . . . Development service for a product from inventor idea to marketing

Company Name
Box No. & Zone Washington 24, D. C.

New service for product development is prepared to take a qualified inventor from his conception to final marketing. The service will redesign the product if required, produce a working model, test results, production drawings, specifications, cost estimates, tooling suggestions, and make contact with potential manufacturers if desired. Details are available upon request direct or by checking the number above.

All Makers of These And All Other Products Are Listed . . . In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 16

▼ REFER—Identify by IEN - 12202 if you write the maker ▼

ANGLE Gear TRADE MARK

Standardized RIGHT ANGLE BEVEL GEAR UNITS

With Capacity of Units Many Times Their Size and Weight

Suitable for use in either manual or power operated systems beyond the limitations of ordinary commercial products. Two basic models meet the requirements of virtually all industrial applications—1:1 or 2:1 ratio with either 2 or 3 shaft extensions.

AIRBORNE ACCESSORIES CORPORATION
25 MONTGOMERY ST. • HILLSIDE 5, NEW JERSEY
SOLD THRU LEADING DISTRIBUTORS

▼ REFER—Identify by IEN - 12203 if you write the maker ▼

YOU CAN BE SURE.. IF IT'S Westinghouse

TROUBLE SEALED OUT

For Improved Production

Westinghouse Oil-Tite Control Stations and Units are Control-Engineered for improved pushbutton control performance. Oil, coolant, cutting compound, water are sealed out. Eliminates possibility of breakdowns due to faulty pushbutton performance. Can be applied to all types of heavy-duty pilot control circuits and controllers. Get complete information from your nearby Westinghouse office, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-90017

Westinghouse
OIL-TITE CONTROL STATIONS

▼ REFER—Identify by IEN - 12204 if you write the maker ▼

SEND FOR THE FACTS of longer LIFE for TOOLS and CUTTERS

Get all the great, free information bulletin describes Simonds Abrasive Company Grinding Wheels for sharpening tools and cutters . . . grinding cemented carbide tools . . . surfacing on alloy steels . . . and for other toolroom jobs. Wheel specifications for various grinding operations included.

WRITE NOW for your copy

for Toolroom Grinding

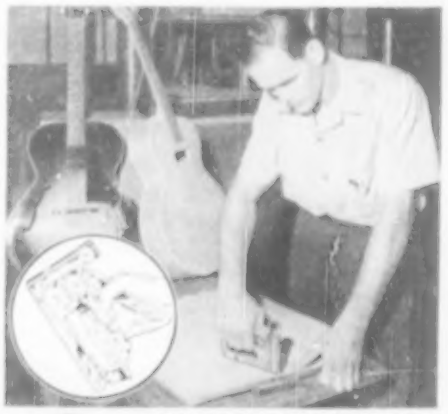
SIMONDS ABRASIVE CO., 3512 TACONY ST., PHILA. 37, PA.
DISTRIBUTORS IN ALL PRINCIPAL CITIES

▼ REFER—Identify by IEN - 12205 if you write the maker ▼

HANSEN • THE TACKER with 1001 USES

ASSEMBLY of wood veneers is speeded up, saving time, labor and material for Gibson, Inc., Kalamazoo, Mich., with the Hansen Model 1-1 Tacker. Tacking operation makes loading of hydraulic presses easier, improves bonding and prevents veneers slipping . . .

. . . in many considerable industry, Hansen Tackers are making a record for Harvester, automotive, radio, aviation, building also, woodworking, shipping, dairies. What is your problem? Submit sample or sketch, with details.

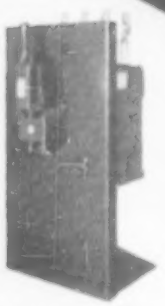


A.L. HANSEN MFG. CO.
5051 RAVENSWOOD AVE.
CHICAGO 40, ILL.

▼ BREFITT—Identify by IEN-12206 if you write the maker ▼

FOR 50,000 KVA
INTERRUPTING CAPACITY

Specify



ALLIS-CHALMERS
TYPE D-20 INDOOR
OIL CIRCUIT BREAKERS

★ 7200 volts — 600 amp
★ 4160 volts — 1200 amp

CONTACTS ARE SELF-CLEANING, easily accessible. Arcing contacts of special alloy have high thermal absorption, resist wear. Breaker fully tested at factory. Operation: Automatic or manual trip. Specify other manual closing (panel or remote control mounting), or solenoid closing (panel or pipe frame mounting).

For complete facts, send for bulletin 71B6022C.

Other A-C breakers in standard ratings up to 230,000 volts, and 5,000,000 kva interrupting capacity. A 1018

ALLIS-CHALMERS, 909A 50 70 ST.
MILWAUKEE, WIS.

ALLIS-CHALMERS A-C

▼ BREFITT—Identify by IEN-12207 if you write the maker ▼

"MULTI-INSULATION"
is the secret of...

HUPPERT
Model 16
FURNACE
Superiority

The sturdy, production-type Huppert Model 16 Furnace not only attains highest heat efficiency, but cuts operating costs to a minimum through unique Huppert method of multi-insulation surrounding all sides of the work chamber. This furnace provides a versatile heat range—continuous up to 1850° F., intermittent to 1950° F. Also built for 2100° F. for special applications.

Automatic Temperature Control featured. Also light-seating, wedge-type door and permanent shelf.

220 V AC single or 3-phase operation (110 V or 440 V models to order). Work chamber 12" w. x 8" h. x 18", 24" or 36" deep.

Write today for the complete Huppert catalog showing all sizes.

K. H. HUPPERT COMPANY
4854 COTTAGE GROVE AVENUE CHICAGO 37, ILLINOIS
Manufacturers of Electric Furnaces & Ovens

▼ BREFITT—Identify by IEN-12208 if you write the maker ▼

SPECIFY
THERMALLOY*
heat and abrasion resistant castings
CHEMALLOY*
corrosion resistant castings

Muffles • Retorts • Pots • Baskets
Trays • Fixtures • Furnace Parts
Heat, Abrasion and Corrosion Resistant Castings of all types
*Reg. U. S. Pat. Off.

AMERICAN Brake Shoe COMPANY
ELECTRO-ALLOYS DIVISION
ELYRIA OHIO

NEWS NOTES—Continued

"Book on how to melt snow"

▼ BREFITT—Identify by IEN-12209 if you write the maker ▼

MELTING . . . How to melt snow described in new textbook of 230 pages

Industrial Press
148 Lafayette St., New York 13, N. Y.

Design, installation and control of equipment to melt snow by automatic hot water jets is treated in detail in new book, "Snow Melting". List price is $4.50. Author is T. Napier Adam, Vice-President of Sayre Manufacturing Corporation. The book covers methods, market data, equipment selection, operation and the controls involved.

▼ BREFITT—Identify by IEN-12210 if you write the maker ▼

NICKEL ALLOYS . . . List of publications which the company can supply on nickel and its alloys

International Nickel Co.
67 Wall St., Room 232, New York 5, N. Y.

Revised 16-page edition of "List A" classifies available literature on uses and properties of nickel by industrial fields from Accessories to Tubing, presents a condensed review on each publication. Additional fields are listed by material from alloy steels to nickel plating. Other subjects cover information on production and fabrication of nickel and its alloys.

▼ BREFITT—Identify by IEN-12211 if you write the maker ▼

PLANT SAFETY . . . Contest for 1951 to promote interest in safety month by month

National Safety Council
425-27 N. Michigan Ave., Chicago 11, Ill.

A calendar measuring 10 by 15½ inches is the point around which the Council's 1951 employee safety campaign is centered. Each monthly sheet of the calendar carries an incomplete jingle in limerick form and a list of cash prizes from $5 to $100 for the best line to complete it. Each limerick stresses an aspect of safety. A sketch and contest instructions are included. Suggestions on safe practice are given.

Instructions on how to conduct safety contests based on the calendar are printed in a booklet supplied without charge on orders of 250 or more calendars. List price of the calendar is 50 to 10 cents in quantities of 1 to 10,000 or more.

▼ BREFITT—Identify by IEN-12212 if you write the maker ▼

STORING . . . Facts on record handling in bulletin dealing with written business records

Remington Rand Inc.
315 Fourth Ave., Room 1105, New York 10, N. Y.

One of the facts in new 24-page Bulletin LHF 548 is that approximately one in twenty file cabinets of an average 5-drawer file cabinet costs over $4,500. The booklet covers the concept "A Technique for Filing Cost and Efficiency". It was written by the company's products and methods research department.

Some of the subjects covered include reasons for increased complexity of filing, cost of creation, a better protection of records, cost of operating a record storage file, handling efficiency, equipment standards, and a long graphic of references.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 56

▼ BREFITT—Identify by IEN-12213 if you write the maker ▼

FOR THESE Extras

LONGER SERVICE
LESS MAINTENANCE
HIGHER PERFORMANCE

use STAINLESS STEEL
FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high accuracy. Install our high-quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

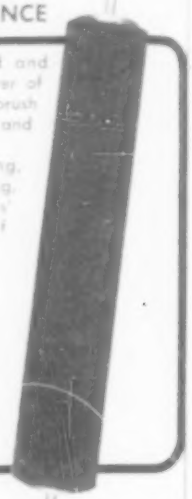
▼ BREFITT—Identify by IEN-12214 if you write the maker ▼

HOW TO "APPLY"
WITH PEAK PERFORMANCE

Industries have time-tested and proven the peak applying power of Jenkins' METLKOR—the cylinder brush that lasts 3 to 12 times longer and can be rebristled!

Whether for textile printing, leather seasoning, paper coating, or applying wax to tile—Jenkins' METLKOR is the top choice of industries.

- Aluminum, cold drawn steel, brass, stainless steel cores
- Cores can't sag or split—perfectly balanced
- Patented rebristling with any type of bristle (including Nylon)
- METLKORS also for arranging and removing



METLKOR
CYLINDER BRUSHES

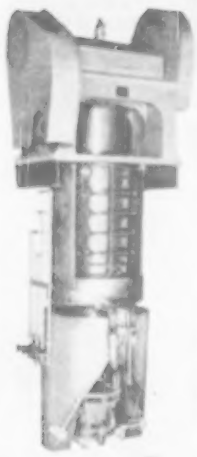
If you have an everyday or perhaps a special brush problem in any operation, call us, or write.

M. W. JENKINS' SONS, INC.
72 YEARS OF INDUSTRIAL BRUSH KNOW-HOW
Cedar Grove, Essex County, New Jersey

▼ BREFITT—Identify by IEN-12215 if you write the maker ▼

Norgren units help put *Continuous* in

Jackson & Church *Continuous* pulp presses

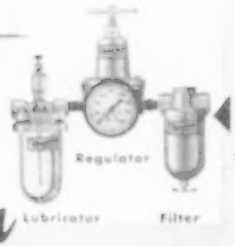


An air-controlled FLOATING CONE beneath a vertical screw-type press spindle automatically maintains a pre-selected constant counter pressure against the force of the pulp feed, regardless of the rate of feed.

J & C selected the Relieving Type Norgren Pressure Regulator to give automatic and continuous control over the performance of their "Zenith" pulp press. Customers report no servicing required even after years of 24-hour service—much of it 7 days a week.

The Norgren Lubro-Control Unit also filters the air and provides automatic atling lubrication of cylinder. Replaces inefficient manual lubrication, prevents scored cylinders and damaged packings.

Get all details
Norgren
Blueprint No. 104



Norgren

Filters, Regulators, Lubricators, Valves, Hose Assemblies.

Write C. A. Norgren Co., 232 Santa Fe Drive, Denver 9, Colo.

▼ BRIEFITT—Identify by IEN - 12217 if you write the maker ▼

How You Save with the NEW Niagara Method of Air Conditioning

Using "HYGROL" Absorbent Liquid

Food Packaging under Controlled Humidity

Because it provides moisture from the air directly, the new Niagara Controlled Humidity Method uses less or no steam-heating temperature for humidifying. You save that more and humidifying at lower temperatures. You also save on supplementary refrigeration power, pre-cooler, and equipment operation.

Using "Hygrol" absorbent liquid gives complete control of temperature and relative humidity. Especially it is a better way for drying air for drying processes, packaging hygroscopic materials, preventing premature damage to metals and preventing losses, deaths, for chemical, pharmaceutical, food processing — or in eliminating water vapor, in comfort air conditioning at lower refrigeration costs.

Filtered air is dehumidified by passing through a spray of "Hygrol" which removes moisture from the air. This liquid is non-corrosive, it contains no salts or solids to precipitate and cause maintenance troubles. It is a non-toxic, non-combustible, non-irritating, non-poisonous material which is not affected by temperature and pressure changes, preventing losses due to all impurities of the air and contaminants automatically.

Units provide a range of capacities from 300 to 20,000 C.F.M. Many factory installations have gone for one successful.

Brochure of results are available. For further information, write Niagara Blower Co., Dept. EN, 405 Lexington Ave., New York 17, New York.

▼ BRIEFITT—Identify by IEN - 12218 if you write the maker ▼

1 SOURCE FOR ALL PARTS YOU NEED

LOCK WASHERS

High carbon steel, bronze, aluminum, stainless steel, monel metal, spring lock washers. Finished or plated with cadmium, nickel, brass or copper. Also Garrett's Aluminum Spring Lock Washer—light in weight with strength of steel.

FLAT WASHERS

Made to meet ASA and SAE specifications in regular steel, spring steel, stainless steel, brass, bronze, monel metal, aluminum, Alclad and copper. Can be plated with zinc, cadmium, nickel, brass, chrome or can be parkerized.

STAMPINGS

From a small part for electronic instruments, automotive stampings and television chassis . . . Garrett can fabricate them better and cheaper than is possible in your own plant. Years of experience and modern highspeed equipment assure speed deliveries . . . Knitted to your specifications.

SPRINGS

Flat and coiled springs to meet every requirement. Every Garrett spring has controlled tension built into it to assure satisfactory performance under all conditions. All types of flat springs . . . coil springs —compression, extension . . . made of round, square or oval spring wire.

MANUFACTURED BY
GEORGE K. GARRETT CO., INC.
PHILADELPHIA 34, PA.

Garrett OF PENNSYLVANIA

▼ BRIEFITT—Identify by IEN - 12219 if you write the maker ▼

MORE HOLES PER HOUR — PER DOLLAR

Increase production of any standard drilling machine by adding a Howe accessory. Use only drill bits with the patented self-centering principle that guarantees horizontal tension equal to the drilling machine itself.

FOR ALL CONSECUTIVE DRILL PRESS OPERATIONS

PROVED PRODUCTION INCREASE . . . Cycle times from five feet can be changed to seven seconds to another specific. A single cap is fitting and in group 2 drilling conditions. Use power feed and drill from standard machine. Drill and ream holes in one operation.

VERSATILITY . . . Fits any standard drilling machine without adapting. Use tool . . . Handles operations such as drilling, reaming, counterboring, and boring. Use machine specific tool. Allow 30 to 40 minutes to get started.

PRECISION . . . Removal of self-centering Howe drill, it automatically locks horizontal position. It also exact alignment with drilling machine spindle. (2) the horizontal tension.

GUARANTEE . . . Also the required to 30 days for any reason. Use tool on all of purchase price. Two-year guarantee. Use tool directly parts.

PRICE . . . Model 2 is specified with the 2 machine-type taper . . . $235.00. Complete series of established prices.

DELIVERY . . . Currently 2 weeks.

☐ Please List . . . Tight-to-Machine Tooling for (Drill press maker) . . . (Model) . . . (Spindle Taper) . . . My name . . . Title . . . ☐ Please send literature on high-speed tool. (Attach coupon to company letterhead)

HOWE & FANT, INC.
324 PLAXHILL RD., SO. NORWALK, CONN.

NEWS NOTES — Concluded

"Where to use cold pressure welding"

▼ BRIEFITT—Identify by IEN - 12220 if you write the maker ▼

TESTING . . Series of information bulletins on application of penetrating-dye flaw detection

Dy-Chek Co.
1523 E. Rossmore, Los Angeles, Calif.

"Dy-Chek Inspection Clinic" gives new series of data bulletins to assure interchange of information on the company's penetrating-dye method of detecting flaws in metal parts. Your name will be added to the mailing list upon request.

▼ BRIEFITT—Identify by IEN - 12221 if you write the maker ▼

VALVES . . Cardboard model shows operation of company's ball valve

Fluid Valve Corp.
683 Third Ave., Grand Ctr., New York 17, N. Y.

Relative location of the operating ball in the company's line valve can be demonstrated in new cardboard model for wide open, throttling, opening, tight closed positions. The company will be happy to send you one upon request.

▼ BRIEFITT—Identify by IEN - 12222 if you write the maker ▼

WELDING . . Instruction book presents 40 lessons on arc welding procedure

Hobart Trade School
22 Hobart Square, Troy 1, Ohio

Second part of the company's handbook has been published as a separate book under the title, "Modern Arc Welding Lessons, AC and DC". The 176-page book lists at $1. Lessons cover starting and manipulating the arc, making joints, welding with bare and coated electrodes, pipe welding, cast iron welding, special work performed by welding.

▼ BRIEFITT—Identify by IEN - 12223 if you write the maker ▼

WELDING . . Application suggestions in new folder on cold pressure welding process

Kaldweld Corp.
151 West 51st St., Long Island, New York 19, N. Y.

Attaching studs to metal sheet, joining sheets, splicing conductors, welding electrical contacts, are some of the applications described in new 4-page folder, "Kaldweld". The pressure process for joining non-ferrous metals was described previously IEN-10000-70. It is available on request.

▼ BRIEFITT—Identify by IEN - 12224 if you write the maker ▼

WELDING . . Application instructions on welding electrodes for tool and die service

Welding Equipment & Supply Co.
221 St. Louis St., Detroit 7, Mich.

Catalog 650 presents in its 50 pages a set of general recommendations on selection and use of tool steel welding electrodes, recommended welding sequences on repairing dies and composite fabrication, a preheating chart, information on tool and die steels, classification of punches and dies, notes on heat treating and hardness testing of steels.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 34

▼ BRIEFITT—Identify by IEN - 12225 if you write the maker ▼

ask for DANLY precision DOWEL PINS

Drive easier because tapered leading end pilots Danly Dowel Pins into close fitting holes . . . resist squeezing. Because they are specially hardened (58 to 60 Rockwell C) . . . meet closer entry requirements with two standard hole ranges, and standard and one ground .001 oversize for enlarged holes.

Send for this free bulletin for helpful application data and catalog information.

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue, Chicago 50, Illinois
PRECISION DIE SETS . . TOOL DIE AND GAGE MAKERS' SUPPLIES

▼ BRIEFITT—Identify by IEN - 12226 if you write the maker ▼

THE HEIGHT OF SANITATION . . . NO FAUCETS TO TOUCH

FOOT CONTROL • HANDS TOUCH NOTHING BUT CLEANSING WATER

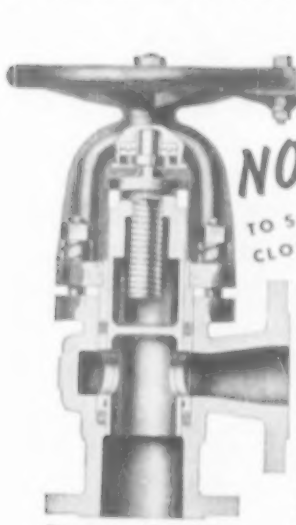
• Sanitary foot control and self flushing bowl eliminate contagious faucet contacts and prevent collections of contaminating water. Write now for further details.

BRADLEY WASHFOUNTAIN CO. 2219 W. Michigan Street, Milwaukee 1, Wisconsin.

Illustrated Catalog 8-711 sent promptly upon request.

BRADLEY Duo Washfountains

▼ BRIEFITT—Identify by IEN - 12227 if you write the maker ▼



NO SEAT!

TO SCORE . . . WEAR . . . CLOG . . . AND LEAK

Cross section of Type "B" Seat-less Angle Valve, Flanged

The Yarway Seatless Blow-Off Valves eliminate the commonest source of trouble and expense with ordinary blow-off valve operations.

The famous seatless principle first introduced nearly 40 years ago, has been constantly improved and adapted to meet modern service requirements.

There is a Yarway Blow-Off Valve for every pressure.

SEND FOR FREE BLOW-OFF VALVE BOOKLET. PLEASE STATE YOUR BOILER PRESSURES.

YARNALL-WARING COMPANY
122 Mermaid Ave., Phila. 18, Pa.

YARWAY BLOW-OFF VALVES

▼ BRIEFITT—Identify by IEN - 12228 if you write the maker ▼

PRECISION Control

by POWERS

IMPROVES PRODUCTION • LOWERS COSTS

End losses caused by over and under heating of processes or operations requiring precise control. Install Powers air operated temperature regulators. Their accurate control helps to improve quality of products and speed up production.

WRITE FOR BULLETIN 370

THE POWERS REGULATOR COMPANY
2737 Greenview Ave. Chicago 14, Ill.
Offices in 50 Cities - 39 years of Temperature Control

▼ FREEFITT—Identify by IEN - 12229 if you write the maker ▼

Your Cost-Cutting Way to SPEED PRODUCTION SHIP MORE GOODS FASTER

...is in this 8-Question Check Chart

Business men the world over hail this famous check chart of 8 important questions which shows them the way to speed production, ship more goods faster, yet cut material handling costs 50% or 75%.

Can you answer questions like these?

"What percentage of your product cost represents material handling?"

"Do you know how much hand-handling is costing you in production inefficiency?"

Here are a few examples of the check chart questions that bring into the open "hidden-handling" operations that may be adding too much to the cost of your product or service.

Write for free Check Chart and our book Automatic Electric Trucks save lift and truck miles of your product with extra longer up-motion . . . get rid of costly bottlenecks, speed the flow of goods in your plant . . . get pay for themselves in as little as months. Send now for check chart.

Trade Automatic Mark
109 West 87th Street, Dept. X-5
Chicago 20, Illinois

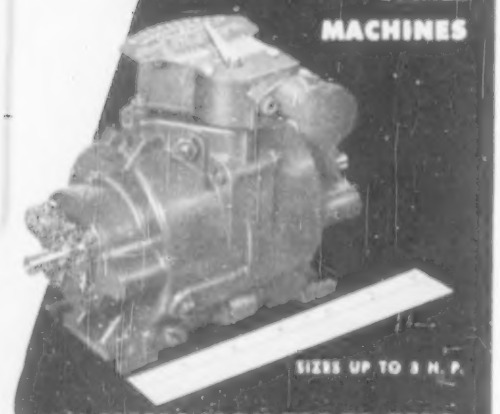
The Automatic Co.
ELECTRIC TRUCKS
Cadillac SERVICE LEADS

▼ FREEFITT—Identify by IEN - 12230 if you write the maker ▼

Graham

THE FINEST VARIABLE SPEED DRIVE MADE

THE MODEL 10 A MIDGET DESIGNED SPECIFICALLY FOR SMALL MACHINES



SIZES UP TO 3 H. P.

ALL SPEEDS FROM TOP TO ZERO "ON THE MARK CONTROL"

Check the dimensions! The Model 10 is specifically designed for such small machines as pumps, feeds and feeders, business machines, instruments, and recorders, to list a few.

MODEL 10 SPECIFICATIONS

H. P. OUTPUT—1/4, 1/2 H.P.
INPUT SPEED—1800 R.P.M. standard—other as required
OUTPUT SPEED—from 3/4 input speed to zero and reverse
AVG. TORQUE—50 in. oz.
CONTROL—Finger-tip lever—no micrometer or sheave
LUBRICATION—sealed-in oil or grease

PROMPT DELIVERY WILL BE MADE UPON RECEIPT ORDER FOR A MODEL 10
Mail the Coupon

PRICES START AT $39.75 f. o. b. Milwaukee to O. E. M. buyers less quantity discount

GRAHAM TRANSMISSIONS, INC.
Dept. IEN, 4714 N. Holton St.
Milwaukee 12, Wisconsin

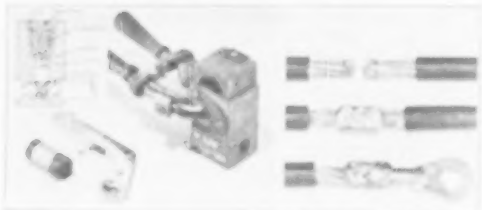
Send latest catalog product Graham drive units to: I HEREBY

Company
Name
Title
Address
City Zone State

▼ FREEFITT—Identify by IEN - 12232 if you write the maker ▼

CONNECTOR . . Molten copper apparatus to join welding cables, assemble lugs

Source: ERICO PRODUCTS INC.
2068-72 E. 61st Place, Cleveland 3, Ohio



Cadweld (trade name) uses operation and molding powders by which the ends of two welding cables or similar copper conductors can be joined permanently or connection lugs connected to the cable. The apparatus consists of a clamping mold or molds made with graphite body parts. There is provision to insert and hold the wire-bonded cable ends and a crucible into which a charge of copper and aluminum oxides is poured. The charge contains a starting powder that is ignited by a fine spark gun included as part of the apparatus.

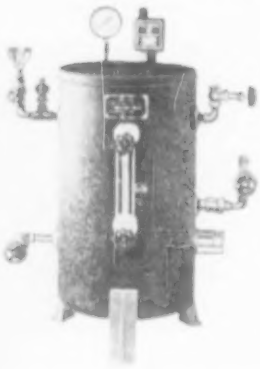
Temperature rises rapidly to free copper from its oxide at about 1900deg. F. The copper flows down after melting a steel retaining disc and forms a connection block around the cable ends. It solidifies in about 5 seconds. Then the mold can be opened and cleaned for the next cycle. The connection is completed by taping.

Two sizes take cables from 1/0 to 2/0 and from 3/0 to 4/0. Unit price is $52. Extra graphite molds add $7.50 each. Cartridges of the oxides and powder cost at $17.50 per box of 100. They will not ignite spontaneously, are safe to handle and store prior to their application.

▼ FREEFITT—Identify by IEN - 12233 if you write the maker ▼

BOILER . . Miniature electric unit, 3 to 15 kw., pressure to 30 or 100 lb.

Source: AUTOMATIC STEAM PRODUCTS CORP.
140 W. 31st St., 1st Floor, New York 1, N. Y.



Four sizes are included in this new line of electrically heated boilers. Standard ratings 3/4 boiler horsepower. The largest rates 15½ horsepower. List price is $175 to $485 with a magnetic contactor and pressure switch to control operation. A low water cut-off is available at an added list of $25.

Construction meets the requirements of the ASME Code for welded pressure vessels and is approved by Underwriters' Laboratories Inc. Heat is supplied by immersion elements operating on 110 or 220 volt single-phase ac. or dc. in the smallest unit, 230 volt three-phase ac. in the largest. The boiler shell is insulated and finished with a steel jacket in well ventilated. Height is 20 to 28 in. From floor to jacket top. Diameter is 7½ to 11½ inches. Capacity is 2 to 8 gallons.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 30

▼ FREEFITT—Identify by IEN - 12234 if you write the maker ▼

▼ FREEFITT—Identify by IEN - 12235 if you write the maker ▼

Cut costs with the NEW ROTOR SCALER

For these jobs:

Weld slag removal	Scaling
Spatter cleaning	Star drilling
Weld peening	Light chipping

Call in the Rotor Analyst to demonstrate it on your work

THE ROTOR TOOL CO.
CLEVELAND, OHIO

▼ FREEFITT—Identify by IEN - 12236 if you write the maker ▼

WHEN PRECISION COUNTS...

PRECISION TUBE COMPANY, INC.

▼ FREEFITT—Identify by IEN - 12237 if you write the maker ▼

QUALITY + SERVICE

2 GOOD REASONS TO STANDARDIZE ON

MAUREY FHP V-DRIVES

Maurey V-Drive quality means flexible, quiet, trouble-free power transmission, precision delivery from stock. Maurey 10-M single and two groove sizes, variable pitch V-Pulleys of Pressed Steel and Cast Iron come in to-the-delivery sizes for any FHP speed ratio or standard speed. Maurey MOR-GRIP long-life V-Belts used on FHP drive units. In addition, Maurey builds special V-Drives to meet special requirements. Investigate the Maurey combination of Quality, Service and Low Cost, and see why leading manufacturers have standardized on Maurey V-Drives.

Immediate Delivery
from nationwide stock at better distributors

Write today for Bulletins describing
Maurey FHP V-Belts — Bulletin FHP-1-C
Rigid Cast Iron V-Pulleys — Bulletin F-4420
Rigid Pressed Steel V-Pulleys — Bulletin F-4219

MAUREY MANUFACTURING CORP.
World's largest manufacturer of pressed steel and cast iron FHP V-Pulleys . . . serving industry since 1917
2916 South Wabash Avenue • Chicago 16, Illinois

▼ RIEFFITT—identify by IEN-12238 if you write the maker ▼

Stop DUST Irritation with

new sensational **FLEX-A-FOAM** — FILTER MASK —

Easier to breathe through and talk through than an ordinary handkerchief . . yet filters non-toxic nuisance dusts as small as 1/25000 of an inch!

- Extremely light in weight — only 1 ounce complete.
- Self-adjusting to every face size.
- Simple in design with only 4 interlocking parts.

SAMPLE $1.50 POST PAID

Dust protection your workers will welcome and WEAR!

Write TODAY for descriptive circular

THE GOGGLE PARTS COMPANY
1468-70 W. 9th St. • Cleveland 13, Ohio

▼ RIEFFITT—identify by IEN-12239 if you write the maker ▼

--The Standard of Quality in ARROWHEAD "O" RINGS

This high standard of quality is possible because of Arrowhead's years of experience in the precision molding of "O" rings. Vigilant quality control from rubber compounding to finished product, and rigid inspection procedures constantly maintain this standard.

Standard "O" Rings Arrowhead "O" rings are available from stock in all sizes and in both Commercial and AN grades. In both grades are types designed for applications involving reciprocal motion, partial rotation and static sealing in both hydraulic and pneumatic uses.

Special "O" Rings For unusual requirements of temperature, resistance to highly corrosive substances, or other highly specialized operating conditions, Arrowhead's research laboratory will develop special compounds to meet the particular requirement.

Whatever the sealing problem, Arrowhead engineers and rubber technicians will welcome the opportunity to offer advice and assistance.

WRITE FOR "O" RING MANUAL

This valuable booklet contains comprehensive data on the use and installation of "O" rings, as well as illustrated information on the design of mechanisms for the proper use of this type seal. Write today for Catalog 502A

ARROWHEAD RUBBER CO.
DOWNEY (Los Angeles County) CALIF.
DIVISION OF NATIONAL MOTOR BEARING CO., INC.
Sales Engineers in Principal Cities

▼ RIEFFITT—identify by IEN-12241 if you write the maker ▼

WATER TREATING . . Zeolite unit to produce soft water at 5 to 76 gpm.

Source: COCHRANE CORP.
3132 N. 17th St., Philadelphia 32, Pa.

Junior Industrial is a new water-softener unit available with treating tanks that measure 12 to 48 in. in diameter and that apply singly or in double assembly with a brine tank for regeneration. The single unit is employed when it is possible to stop the soft-water supply for a time or where the water can be delivered to a reserve tank for use during regeneration.

The equipment is designed for operation at 100-lb. water pressure. The tanks are made of galvanized steel with the required accessory equipment and operating valve. Various types of zeolite can be employed depending on the requirements of a given installation. Detail information is contained in 4-page publication 4505.

▼ RIEFFITT—identify by IEN-12242 if you write the maker ▼

DRIVE . . Hydraulic fluid is flame resistant, also will lubricate

Source: MONSANTO CHEMICAL CO.
1702 S. Second St., St. Louis 4, Mo.

Technical bulletin No. O-D1602, 4 pages, presents the data

Hydraulic Fluid F-9 is a new oil-type liquid for use in the hydraulic circuits of equipment such as die-casting machines, hydroelectric turbines, glass-drawing machinery, hydraulic presses. It has good lubricating properties and high resistance to mechanical shear or chemical breakdown. It is inert to the usual metals of construction but has a swelling action on some elastomeric materials and acts as a solvent on some paints. The compound will advise on application.

▼ RIEFFITT—identify by IEN-12243 if you write the maker ▼

SEALING . . Electric iron to join heat sealing sheet materials

Source: AMSCO PACKAGING MACHINERY INC.
31-33 48th Ave., Long Island City 1, N. Y.

Spring-mounted Teflon frame is the new sealing iron for polyethylene sheet materials. Iron is 4 in. by 6 in., sealing bar is one measuring 8 in. in length, sealing width is ⅛ in. under the electrically heated bar. The iron is moved along a seam to be sealed between two sheets of the material. There is no tendency to stick to the iron. Operation is on 110-volt ac or dc. The price is $19.50 each as list. Extra 4 and 6 in. units add $1.75 each to the list price listed.

10 Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . . Ratings . . . See Page 30

▼ RIEFFITT—identify by IEN-12244 if you write the maker ▼

MET-L-WOOD
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Selected Release Constructions)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally sound designs in hundreds of varied uses. Best way toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below. . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and drawings on Met-L-Wood, applications, construction types, dimensions. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood — permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

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6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

▼ RIEFFITT—identify by IEN-12245 if you write the maker ▼

for accurate time control of almost any job! . . . GE TIME SWITCHES

TYPE T-47 HANDY TIME SWITCH. Here's top-notch time control at rock-bottom cost. Use it for floodlighting, for motor or heater control . . . for any job requiring one ON-OFF operation during 24 hours. Extra dial riders are available to permit a second ON-OFF operation! ONlers are setting from five minutes to 22 hours. Price: $10.98*.

TYPE T-27. Here's a switch that will do almost any job you ask of it. Performs any practical number of ON-OFF operations a day. With astronomic dial it can follow a changing dusk-dawn schedule—with snapping device it can skip certain days.

Use it indoors, use it outdoors . . . use it anywhere. Use it for press or conveyor control, for refrigerator defrosting, for under-pier control. If you've got a job that needs accurate, repetitive timing, here's your best answer. From $25.50*.

Both switches are operated by Telechron® motors and feature silver, snap-action contacts. Get in touch with your G-E distributor today, or write for Bulletins GEC-678 (T-47) and GEC-531 (T-27). Apparatus Dept., General Electric Co., Schenectady 5, N. Y. *Manufacturer's suggested retail price.

GENERAL ELECTRIC

▼ RIEFFITT—identify by IEN-12246 if you write the maker ▼

NOW you can bend Thin-Wall Conduit profitably

Here's the efficient way to bend ½, ¾ and 1" electrical metallic tubing. It's done with Blackhawk's remarkable all-functional "Porta-Power" hydraulic unit.

NEW BENDING SHOES create kinkless, wrinkle-free bends, matched offsets

ONLY Porta-Power gives you these benefits

Write for Free Bulletin No. 518 on Benders for Both Rigid and Thin Wall Conduit . . . and ask about the HYDRAULIC Knock-Out Punches. New bending wheels, or some other Blackhawk tool? Write Co. Inc. PISTOL Milwaukee 1, Wis.

BLACKHAWK

▼ RIEFFITT—identify by IEN-12247 if you write the maker ▼

INCREASE LIFTING CAPACITIES WITH KOEHRING TRUCK CRANES

On scattered lifting jobs requiring frequent moves, you'll find it pays to use Koehring rubber-tired Truck Cranes. 304 safely lifts up to 50,000 lbs. . . . 11.1 tons more than its crawler rating. Smaller 205 Truck Crane, (illustrated) with its 20,000 lb. lift on rubber, increases load capacities about one-half.

Mail today to: KOEHRING CO., Dept. IEN, Milwaukee 10, Wis.
Please send Bulletin on: ☐ 304 Truck Crane ☐ 205 Truck Crane
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....
Type of plant or work .....

KOEHRING TRUCK CRANES

▼ REFER IT—Identify by IEN - 12248 if you write the maker ▼

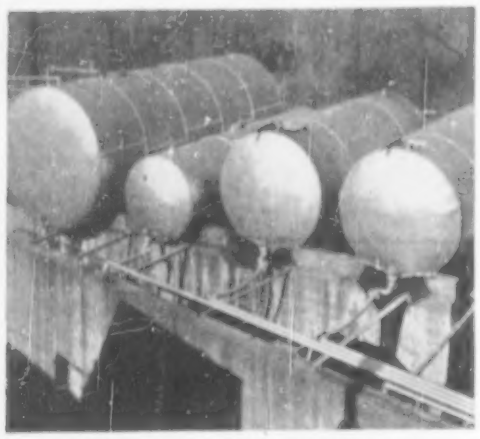
PHOTO-ELECTRIC (ELECTRIC-EYE) COUNTING

You can count anything from shadows to hot cars—parts, oranges, bottles, sheets, cans, cases, etc. with Wizard Electric Counters and Photo-electric units, relays or any suitable switches. Speeds to 600 CPM. Rugged's built for heavy duty service. Easily installed in groups for Centralized Production Control. Can be located at any distance from actual source of count. Many other features.

For recommendations just tell us what you want to do. Catalog of Mechanical and Electric Counters on request.

Production Instrument Company
700-10 W. JACKSON BLVD., CHICAGO 6, ILL.
Representatives in Principal Cities

▼ REFER IT—Identify by IEN - 12249 if you write the maker ▼



READ HOW TO PROTECT TANKS AND THEIR CONTENTS*

Free Book Full of Ideas

THIS NEW FREE BOOK tells how you can use the right aluminum paint to save evaporation losses and reduce expansion of liquids, because of aluminum's high reflectivity. It's packed with a wealth of ideas about using the right aluminum paint in the right places to protect against moisture and fumes and brighten up your plant.

ALCOA does not make paint, but we have prepared this book to help you select the right aluminum paints, made by leading paint manufacturers from Alcoa pigments. Included are application instructions to insure maximum service; coverage tables; facts on correct types of ready-mixed aluminum paints for metal, masonry, wood—inside or out—and for heated surfaces. A copy is yours for the asking.

Fill out the coupon below and attach it to your letterhead; we'll send your free copy by return mail.

MAIL THIS COUPON TODAY

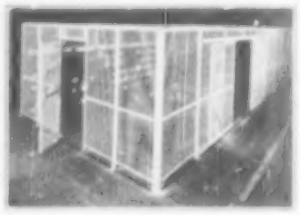
ALUMINUM COMPANY OF AMERICA
Paint Service Bureau, 1710 Gulf Bldg., Pittsburgh 19, Pennsylvania.
Please rush the free copy of "Painting with Aluminum"
Name (please print)
Address
City Zone
We plan to paint the following:

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.
*The RIGHT aluminum paint for this job is ALUMINUM METAL & MASONRY PAINT.
ALCOA ALBRON

▼ REFER IT—Identify by IEN - 12251 if you write the maker ▼

BUILDING . . Sectional partition made of expanded metal in angle frame

Source: WHEELING CORRUGATING CO.
Wheeling Steel Bldg., Wheeling, W. Va.



Panels, doors, corner posts for 90-deg. or special angle, top brace bars and base-attachment angle clips make up a new assembly of standardized ExM Angle Frame partitions. The panels are 8 and 10 ft. in height and 1, 2, 3 and 4 ft. in width. Swing and slide-door openings are 7 ft. in height with 1 or 3-ft. transom panels for the two overall height dimensions.

Swing-door widths are 3 and 6 ft. for single and double doors. Slide-door openings are 3, 4 and 6 ft. for single slide and 8 ft. for double slide. Doors are equipped with hasps and staples or with cylinder locks. Special dimensions can be specified for parts to be built to order. Units are supplied plain or with one coat of shop primer.

Catalog, 20 pages, "Expanded Metal Standard Partition Panels", presents illustrated description of the individual elements in the new standardized line with assembly procedure, typical layout drawings, dimensioned parts, accessories, special expanded metal products and a list of uses.

▼ REFER IT—Identify by IEN - 12252 if you write the maker ▼

TESTING . . Induction instrument reads carbon content in ferrous metals

Source: BURRELL CORP.
1940-44 Fifth Ave., Pittsburgh 19, Pa.

Combustron trade name, new induction instrument in which a sample of ferrous metal is heated to the point of combustion in an atmosphere of oxygen for determination of carbon and sulphur. Two assemblies mount one or two combustion tubes and induction coils. The tubes are made of transparent Vycor which is 96 per cent silica and measures 9 in. in length. The sample inserts in the tube in a combustion boat. A hood in the tube keeps spatterings from the inner wall and provides a receptacle for a glass-wool filter. Operation is automatic, takes 2 minutes.

The instrument provides connections for inlet oxygen and outlet gas from the combustion action. Both are on the front panel with grid and plate milliammeters, oxygen flowmeter and valve. Electronic tubes for the heating current generator are on a base back of the panel with transformers and other components. The instrument connects with a combustion train supplied by the user for gravimetric or volumetric measurement. A Scrubber to remove oxides of sulphur is available for use in the train depending upon requirements.

All Makers of These And All Other Products Are Listed — In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

FIND WHAT YOU WANT?
See our suggestions at the top of the index, page 102

▼ REFER IT—Identify by IEN - 12253 if you write the maker ▼

PUT ON IN NO TIME . . . STAY ON FOR ALL TIME —

Electroline WIRE ROPE FITTINGS

minimize re-roping!

These are outstanding advantages of Electroline fittings: Shorter installation time—no heat, acids or dangerous molten metal is required—unskilled labor, using ordinary mechanic's tools, make connections in a matter of minutes. And, these permanent wire-rope fittings prolong the life of rope by damping vibration and overcoming rope-fatigue at entrance to fittings—can be reclaimed and used over and over again.

Illustrated, pocket-size Catalog fully describes all advantages of Electroline wire rope fittings . . . send for your copy, today.

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS

▼ REFER IT—Identify by IEN - 12254 if you write the maker ▼

Because it's made of ramie, nature's strongest fiber . . .

NEW NAVALON

lasts longer than other cold-liquid Packings !

Longer packing life . . less downtime . . lower packing costs—that's how Johns-Manville Navalon packing pays off in refrigerating service against fresh and salt water, brine, cold oil and other cold liquids.

Navalon has the high tensile strength and long-lasting, resilient qualities that have made ramie fiber famous for centuries. An exclusive Johns-Manville process imparts superior lubricating properties that further assure long life.

For details, see your local packing distributor or send for folder PK-12A. Address Johns-Manville, Box 290, New York 16, N. Y.

JM Johns-Manville PACKINGS & GASKETS

▼ REFER IT—Identify by IEN - 12255 if you write the maker ▼

Announcing . .

The NEW Strathers & Wells IMPREGNATOR

For DEPENDABLE IMPREGNATION OF ELECTRIC COILS — WOOD CARBON PARTS — AND OTHER MATERIALS

The new Struthers Wells Impregnator for dependable, simplified impregnation of a wide variety of materials, is available in a complete line of sizes for vacuum and pressure operations—for use by heating with steam, electricity or Dowtherm, or for non-heated operations. Supplied in complete units or illustrated, as principal parts only may be specified, if desired. ★ Heating systems are supplied if required.

Write today for Bulletin B-30

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA.
OFFICES IN PRINCIPAL CITIES

▼ REFER IT—Identify by IEN - 12256 if you write the maker ▼

DRASTICALLY CUT YOUR RISING PLANT MAINTENANCE COSTS!

THESE FREE BOOKLETS PROVIDE FACTS YOU NEED ON MODERN SCAFFOLDING

This detailed information will prove to you that either Waco Rolling Towers or Waco Scaffold Jacks are far superior to the ordinary scaffolding you are accustomed to using. Today's time-consuming plant maintenance problems call for special, up-to-date equipment. You'll find the answer in Waco Jacks or Towers.

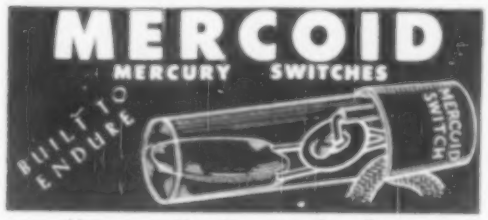
WRITE WACO TODAY

WILSON-ALBRECHT CO., INC.
3551 WOODDALE AVENUE
MINNEAPOLIS 16, MINNESOTA
Also Manufacturers of Aluminum Ladders and Swing Stages

▼ RAPIFIT—Identify by IEN - 12257 if you write the maker ▼

MERCOID

MERCURY SWITCHES



Universally Known for Their Superior Quality and Workmanship

They are not affected by dust, dirt or corrosion and have many definite applications where open contacts are not suitable. Various types available. MERCOID is your guarantee of the best in mercury switches. Further information sent upon request.

LET MERCOID SOLVE YOUR CONTROL PROBLEMS

They rank first for convenience of adjustment—dependable service and long life.

They are designed for various applications requiring the control of pressure, temperature, liquid level and mechanical operation.

Complete Mercoid Catalog sent upon request

THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO 41, ILL.

▼ RAPIFIT—Identify by IEN - 12258 if you write the maker ▼

Now...make sharper cuts in production costs!

New walker turner **16" Band Saw**

...with AUTOMATIC power feed

Three-piece frame and body construction for greater rigidity, accuracy, and smoother operation. Gives you more production per operator; more profitable operations, more years of service. Patented Feeding Mechanism prevents overloading blade, greatly prolongs blade life.

Put this new Walker-Turner 16" Metal Cutting Band Saw to work in your shop. Watch how it speeds cutting and cuts production costs. See your distributor, or mail coupon for catalog describing this and other machines in the complete Walker-Turner line of power tools for metal and woodworking operations.

WALKER-TURNER
A DIVISION OF
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

SOLD ONLY THROUGH AUTHORIZED DEALERS

DRILL PRESSES • JOINTERS • TABLE SAWS • BAND SAWS • BELT and DISC SURFACERS • JIG SAWS • RADIAL SAWS • LATHES • TESTING ARBOR SAWS

WALKER-TURNER DIVISION
Kearney & Trecker Corp., Dept. IE-12, Plainfield, N. J.
Please send me a copy of the complete Walker-Turner Catalog.
Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

▼ RAPIFIT—Identify by IEN - 12260 if you write the maker ▼

LIGHTING . . Fluorescent fixture threads into incandescent light socket

Source: STOCKER & YALE
46-50 Birch St., Marblehead, Mass.

Lite-Mite Bulb Model 16-2E is a new miniature complete fluorescent fixture with aluminum reflector housing, controls, sockets, two 4-watt fluorescent lamps and a threaded connection base that fits in a standard incandescent-lamp socket. The housing measures 6 in. in length by 2 in. in width. The unit provides 500 footcandles of cool illumination at 3 to 5 in. working distance. Standard operation is on 110-volt 60-cycle ac. Either 220-volt ac or 110-volt dc can be specified. List price is $9.75 for five or less.

▼ RAPIFIT—Identify by IEN - 12261 if you write the maker ▼

BATTERY CHARGING . . Panel equipment with generator, serves several circuits

Source: HERTNER ELECTRIC CO.
12688-92 Elmwood Ave., Cleveland 11, Ohio

Batteries plug in for re-charging

A control panel for the motor-generator and a required number of charging panels make up a new assembly of Unitized equipment to charge industrial truck batteries. The panel assembly is dead-front design with controls operated by push buttons. Each panel unit carries the required meters, timer and cutoff. Capacity is to 150 a.h. Overall height of the panel is 72 inches. Width ranges from 27 to 63 in. for 2 to 6 circuits. The motor-generator is the company's previously developed design particularly for charging service.

▼ RAPIFIT—Identify by IEN - 12262 if you write the maker ▼

GAGE . . Expanding design for small holes, slots, recesses

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

Five units make up a new No. 830 set of internal gages based on the company's previously developed and patented expanding "split-ball" design. The new units are flat just under the major diameter so they can be employed in shallow holes, slots, recesses. The five units cover a range of internal width or diameter from .125 to .500 inch.

Each is fitted with a stem that is turned until an expanding cone moves the gaging edges into "feel" contact. The position thus obtained is measured with a standard micrometer. Gage length is about 2 in. in overall dimension.

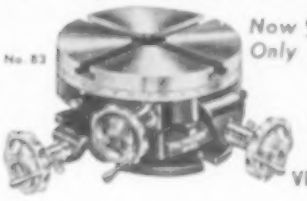
[All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

▼ RAPIFIT—Identify by IEN - 12263 if you write the maker ▼

DUAL CROSS and ROTARY FEED

PALMGREN

Rotary, Index, Milling Table



No. 83

Now Only $49.50

Turns Your DRILL PRESS Into A VERTICAL MILLER

Think what this will mean in your shop! Can be used on any Drill Press, Lathe or Milling Machine and provides what is practically a universal milling machine.

Designed for use on all types of metal and woodworking shops. A precision table permitting the work to rise underneath. It is secured, quickly, and convenient and adjusted quickly in a fine position.

Rotary and calibrated in degrees. Cross feed in thousandths. Dual Cross Slide with cross feed 2 1/2" each side of center or 4 1/4" overall. Has acme thread screw feed screws, adjustable gibs on cross slides, 40 to 1 worm and gear ratio in rotary feed. Equipped with bolt slots and locking screws.

No. 82 Table Dia. 8", T Slots 3/8". Base Keyway 3/8". Base Dia. 8 1/2". Ht. 6". Wt. 37 lbs. Price Only $49.50. Other Types available. No. 82 Dual Cross Feed only $29.75. No. 80 Rotary Feed Only $42.50.

Order Today! If dealer can't supply, write us. Ask for Circular No. 10

CHICAGO TOOL and ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS Since 1918
8406 South Chicago Ave. • Chicago 17, Ill.

▼ RAPIFIT—Identify by IEN - 12264 if you write the maker ▼

famco (COST CUTTING) machines

HIGH IN QUALITY— LOW IN COST

DRILL PRESSES

Best buy in 15" drill presses. Complete line of single and multiple spindle models, bench and floor types. Many exclusive Famco features.

SQUARING SHEARS

In 3 power and 5 foot models. Cutting widths 22" to 32". Capacity up to 18 gauge mild steel. Inexpensive, ruggedly built, many features.

POWER PRESSES

Open-back, inclinable, bench and floor type. Heavy semi-steel, cast iron frame and drop-forged, one-piece crankshafts. Most models: highest quality in small presses.

METAL CUT-OFF BAND SAWS

High quality machine tool made in both dry and wet cutting models. Capacity up to 4" round and 6" x 12" rectangular stock. Many exclusive Famco features.

Other famous Famco equipment includes: Arbor Presses in 32 stock types, delivering up to 15 Tons pressure, and Foot Presses in 10 bench and floor types, rated up to 1¼ Tons pressure. The complete Famco line is available through industrial equipment distributors everywhere.

FAMCO MACHINE COMPANY
1303 18TH STREET RACINE, WISCONSIN

▼ RAPIFIT—Identify by IEN - 12265 if you write the maker ▼

Pheoll SEMS

Bind Parts Together 50% FASTER

More than 50% savings in assembly time is not unusual when Sems—single screw and washer units—are used in production work. These combination screws and free rotating washers will—

- End time necessary to place washer on screw.
- Prevent jammed assembly problems in close work areas.
- Assure having washer on screw when specified.
- End danger from washer dropped in assembly.
- Speed up assembly by reducing part handling time.

Many washer types are available for assembly needs—investigate through your design engineer how to improve production with Sems. Or, call in Pheoll engineers for unbiased recommendations.

Additional Profit Producing PHEOLL PRODUCTS
Machine Screws, Machine Bolts, Special Screws and Bolts, Cap Screws, Machine Screw Nuts, Wood Screws, Thumb Screws, Brass Washers, Tapping Screws, Stove Bolts

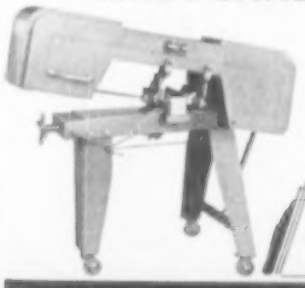
Pheoll MANUFACTURING COMPANY • 3700 Roosevelt Road, Chicago 50, Illinois
SCREWS • BOLTS • NUTS *Industrial Fasteners and Holding Devices*

▼ RAPIFIT—Identify by IEN - 12266 if you write the maker ▼

"JUNIOR" does a MAN-SIZE JOB

Yes, this Johnson "Junior" Band Saw can do a real job. It's small and handy, yet sturdy, and has speed, versatility and accuracy. Use it for production or occasional cutting in small shops or large plants. Furnished with or without caster. Roll it or carry it. Move it in a jiffy to do countless jobs.

JOHNSON "JUNIOR" MODEL B BAND SAW



3" x 10" capacity. Inexpensive. Will pay for itself many times over.

ALSO MODEL J, a heavy, sturdy tool. Capacity 10" x 18"

Write for CATALOG!

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

▼ BREVITY—Identify by IEN - 12267 if you write the maker ▼

GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 12268 if you write the maker ▼

for close check on surface temperatures

Alnor PYROCON

Wherever a close and frequent check on low surface temperatures must be maintained on machines and materials, you'll find the handy Portable Pyrocon a valuable instrument. It is unexcelled for fast, accurate temperature readings of any surface, flat or curved, stationary or revolving. It may be used with plastic materials, waxes, rubber, liquids, oil or grease, molten soft metals, etc. The rugged Pyrocon can bring laboratory accuracy to your temperature measurement—at low cost. Write today for details on wide selection of thermocouples and extension arms.

Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

▼ BREVITY—Identify by IEN - 12269 if you write the maker ▼

Humphrey GAS UNIT HEATER

A complete heating plant in itself, using no steam or water, the Humphrey Gas Unit Heater is ideal for heating factories, warehouses, stores and countless other places. A powerful fan circulates the heat to every corner of the room. Burns all types of gases. Made in sizes to fit every need.

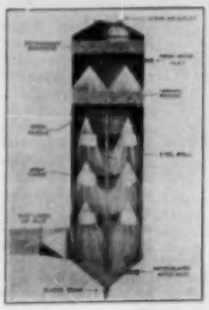
Write today for complete information.

GENERAL GAS LIGHT COMPANY
KALAMAZOO, MICHIGAN

▼ BREVITY—Identify by IEN - 12270 if you write the maker ▼

DUST COLLECTING . . Water-wash unit for ultimate recovery of process dusts

Source: PRATER PULVERIZER CO.
1503 S. 55th Court, Chicago 50, Ill.



Dust-laden air from a unit of process equipment is blown into the cylindrical housing of this new Pennsco Dust Master collector. Dust and air enter near the bottom, impinge against the wetted walls and most of the heavy dust particles separate out to fall to the cone shaped bottom. The air and remaining dust turn upward to pass through succeeding throat openings filled with water spray.

Further upward movement is through a water-sprayed ceramic bed where restricted area results in increasing velocity accompanied by impingement on the packing. Final movement is through a dry ceramic bed to the top outlet. The equipment is available to specification for given type and quantity of industrial dust.

▼ BREVITY—Identify by IEN - 12271 if you write the maker ▼

CLEANING . . Antiseptic liquid lays floor dust, inhibits bacteria

Source: WEST DISINFECTING CO.
42-18 West St., Long Island City 1, N. Y.

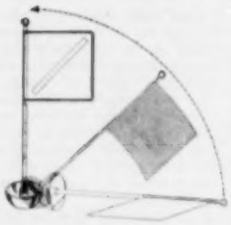
One gallon covers 4,000 square feet

Antiseptic Westone trade names new liquid for use with a rag or mop or to spray over a floor surface. Application removes dust from floors and leaves an antiseptic film which inhibits growth of bacteria. The film also seals the surface and holds down subsequent dust for easy removal. Airborne bacteria are minimized. Floor appearance is improved.

▼ BREVITY—Identify by IEN - 12272 if you write the maker ▼

SIGNALING . . Stand mounted flag returns to upright when knocked over

Source: INDUSTRIAL PRODUCTS CO.
2801 N. Fourth St., Philadelphia 33, Pa.



Cast-iron base in this new assembly is shaped and weighted so it will rock back to upright position after it has been rolled over on its side. The action returns the 13 by 13-in. red danger flag to signaling position on its 32-in. staff. An eye at the top of the staff takes a barrier rope. A spring-steel stay fits in a diagonal pocket in the flag to hold it extended. The staff can be pulled out of the base.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

▼ BREVITY—Identify by IEN - 12273 if you write the maker ▼

ELECTRICALLY-CONTROLLED

AIR CYLINDER

Complete POWER UNIT WITH BUILT-IN CONTROLS

THE Bellows electrically-controlled BSM Air Motor is a complete reciprocating straight line power unit. Performs any pull, push or lift operation at a touch of a button. Built-in speed controls give positive control of piston rod speed in either or both directions. No extra valves to buy . . . no expensive piping to install. Only one air connection required which may be flexible hose. Available in 1¼", 2½", 3⅛" and 4½" bores — any stroke length.

Dept. IEN-1250

Write for Specification Bulletin BSM

The Bellows Co.
Akron, Ohio

▼ BREVITY—Identify by IEN - 12274 if you write the maker ▼

STRAIGHTEN COIL STOCK FOR PRESSES, SHEARS OR SLITTERS

WITH

LITTELL Variable Speed STRAIGHTENING MACHINES

Output rises, costs drop when coil stock is fed to the press, the shear, or the slitter through a Littell Straightening Machine. Coil stock comes out of a Littell Straightener flat, with curvature removed. Equipped with variable speed transmissions, Littell Straighteners are easily adjusted to meet a wide range of speed requirements. Thirteen medium and heavy duty models straighten coil stock of all standard widths and thickness.

WRITE FOR CATALOG

F. J. LITTELL MACHINE CO.
ROLL FEEDS • DUAL FEEDS • STRAIGHTENING MACHINES • REELS • ZIN BLAST VALVES
4133 N. RAVENSWOOD AVE. • CHICAGO 13, ILL.

▼ BREVITY—Identify by IEN - 12275 if you write the maker ▼

LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 @ $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal	(7,900 lbs.)
$38.00 if oil	(633 gals.)
$50.63 if gas	(67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. **"EASY-TITE"**

Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age *and without obligation.*

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-120
2563-95 Third Avenue, New York 51.

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

BREVITY—Identify by IEN - 12277 if you write the maker

A manufacturer of X-ray equipment required that a box of parts be packed with each highly finished X-ray unit. The A. J. Gerrard fiber and steel strap was applied around the carton as well as the polished steel. The paper covered steel strap applied directly on the product saved packing time and assured arrival of shipment in a first class condition.

With 11 different kinds of strap available, A. J. Gerrard also can help you.

Strap Calculator. Write for your free copy.

STEEL STRAPPING

A. J. Gerrard & Co.

1950 Hawthorne Blvd., Melrose Park, Ill. (Chicago Suburb)

BREVITY—Identify by IEN - 12278 if you write the maker

B.F. Goodrich

Industrial tire analysis cuts costs up to 50%

TIRE AND WHEEL ANALYSIS PLAN will save you money

HOW IT WORKS:

Without obligation, the B. F. Goodrich man who specializes in industrial tire and wheel service will survey your operation. He'll study the loads, the type of hauls and equipment, and the floors and hauling surfaces. Then, he'll recommend the best type, size, tread and tire compound for your work. He'll also give you helpful suggestions on tire care and maintenance. Studies prove that this service saves up to half of tire and wheel costs in 2 out of 3 cases.

WHY IT WORKS:

This B. F. Goodrich man represents the *only* company which offers a *complete* line of industrial tires. His advice is impartial—unbiased. He offers 14 types of tires, 7 different tread compounds and a full range of sizes! By using the coupon below, you'll get full information on this savings-service.

The B. F. Goodrich Co.
Department TW-76
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

Name _____

Title _____

Company _____

City _____ State _____

B.F.Goodrich

BREVITY—Identify by IEN - 12280 if you write the maker

DRILLING . . Special machine drills 32 holes in cash register drawer

Source: NATIONAL AUTOMATIC TOOL CO.
49 National St., Richmond, Ind.

New machine operates in an automatic cycle to drill groups of small holes, .098 to .199 in. in six faces of a plastic cash-register drawer. It mounts 32 spindles and will produce 50 drilled drawers in an hour. The work mounts in an indexing fixture. The horizontal spindles are carried in two hydraulic-feed heads, each with its own drive motor. Control centers at a pushbutton panel.

BREVITY—Identify by IEN - 12281 if you write the maker

SEALING . . Water white liquid to seal brick, concrete and stone

Source: X-PANDO CORP.
43-17 36th St., Long Island City 1, N. Y.

Liquid saturates and penetrates

Silicone has been added to the company's previously developed liquid known as X-Pando-seal for application on brick, concrete, stone. The material penetrates the surface, dries to an invisible film that seals the pores against moisture penetration. The new compound with silicone is impervious to moisture to the extent that water will remain on the surface in drop form until it evaporates.

Application is by brush or spray with coverage from 120 to 200 sq. ft. per gallon. The liquid will set in about 4 hours. The company supplies instructions so no previous experience is required to apply the material correctly.

BREVITY—Identify by IEN - 12282 if you write the maker

DRIVE . . Variable speed assembly of motor and V-belt transmission

Source: STERLING ELECTRIC MOTORS INC.
5399-03 Telegraph Road, Los Angeles 22, Calif.

Ratings are from ½ to 3 hp. and speed variation is stepless in ratios from 2 to 4 to 1 in new assembly of the Speed-Trol drive with a single-phase capacitor-type motor. Eighteen maximum speeds are 52 to 2,000 rpm. with reduction down from there. The motor frame is drip-proof construction. The rotor is the company's herringbone design. The stator coils are insulated in Vinol-acetol plastic. Dimensions are for standard NEMA mounting. The motor employs a new starting relay in place of a centrifugal switch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 12283 if you write the maker

American Welding makes rings, bands, and welded products for hundreds of other manufacturers at real savings! We believe we can save money for you.

Designers, engineers, and metallurgists are ready to work with and for you. All types of resistance and fusion welding equipment for working with ferrous and non-ferrous metals and alloys are available, as well as heat-treating and machining facilities.

Send prints and specifications for prompt attention.

SEND FOR 20-PAGE CATALOG

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

BREVITY—Identify by IEN - 12284 if you write the maker

A Cleveland Tramrail System with motor-driven roll grab picks up, delivers and sets in place rolls from 16-inch to 60-inch diameter, in lengths to 72 inches and weights up to 5,000 pounds. All motions of the crane and grab are controlled by operator without need of leaving cab.

GET THIS BOOK! BOOK No. 2008 Packed with valuable information . . .

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4201 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

BREVITY—Identify by IEN - 12285 if you write the maker

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

Complete information on improved centrifugal Spray Dryer, illustrated with photographs and engineering design drawings.

THE DRYING AND CONCENTRATING COMPANY DRYER

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Shottery Pumps with variable speed drives for handling the liquid material and controlling the moisture.

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

***CONCENTRATOR AVAILABLE SEPARATELY**

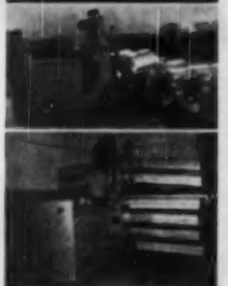
The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

DRYING and CONCENTRATING CO.

BREVITY—Identify by IEN - 12286 if you write the maker

LABOR COSTS CUT 36% PER TON DESPITE DOUBLING OF WAGE RATES!

Baker Trucks help Southern States Iron Roofing Company Increase Production with Lower Manufacturing Costs



How BAKER TRUCKS work with new production equipment to provide increased output at lower per-ton cost, is shown by this company with 10 branches, using a total of 12 Baker Trucks. Two Baker 6000-pound Fork Trucks, and a traveling crane, require only about 10 minutes to unload a truckload of 27 aluminum coils, weighing over 40,000 pounds. In another 20 minutes, the Baker Trucks warehouse the entire load.

From storage, the trucks move the coils to cutters, which shear the metal in 6- to 12-foot lengths. These sheets are palletized and delivered by truck to the presses at working height. These new high-speed presses handle some 7,000 sheets in eight hours—150% more than former equipment. Processed roofing sheets are transported to storage and later to shipping carriers by the fork trucks.

Although wage rates have doubled, direct labor costs have been reduced about 36% from former methods using hand labor and slower presses.

Write for information

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*
1226 West 80th Street • • Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

▼ BREVITY—Identify by IEN - 12287 if you write the maker ▼

The Logical First Milling Machine

When you decide to buy your first Milling Machine, make it a Sheldon. This moderate price machine tool can be bought as a basic machine that will come within your budget . . . available with power or hand feed; with or without back gears.

• • •

Sheldon Milling Machines are rigidly built for continuous, precision service. The spindle is supported in double row Timken Taper Roller Bearings. Fully enclosed variable drive, spindle range 100 to 1100 r.p.m. (with back gears, speeds from 25 r.p.m., up). Tapered gibs throughout.

• • •

Write for complete Catalog which includes specifications and attachments.

Available Accessories and Attachments
Power Feed — Universal Head
Dividing Head — Coolant System
Rotary Table — Swivel Vise
Drip Pan Bible

SHELDON
CHICAGO
SHELDON MACHINE CO., INC.
4258 N. Knox Ave., Chicago 41, Ill.

▼ BREVITY—Identify by IEN - 12288 if you write the maker ▼

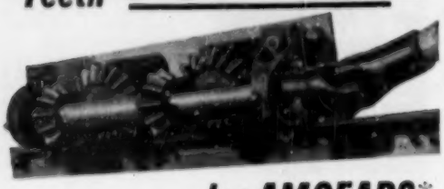
New booklet tells how to save on ring-shaped parts

Learn how manufacturers have realized startling savings on machining, weight and cost through Dresser's unusual service and facilities for making ring-shaped and cylindrical metal parts. You may save as much or more. Write today for "Rings Folder".

DRESSER MANUFACTURING DIVISION
59 Fisher Ave., Bradford, Pa.
One of the Dresser Industries

▼ BREVITY—Identify by IEN - 12289 if you write the maker ▼

Gear Teeth FORGED! by AMGEARS*



Precision FORGED-TOOTH gears eliminated failures of cast-tooth, cast-iron gears on the heavy duty material loader drive shown above. Costs were 50 per cent less than for commercially cut gears.

If you use gears for bevel differentials, farm machinery drives, construction and road machinery or similar slow speed applications, it will pay to investigate FORGED-TOOTH gears. Send blueprints or samples of gears you are now using for comparative application, performance and cost analysis.

* AM . . . Accurately Made

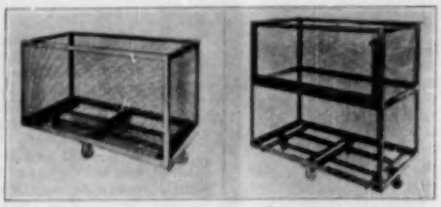
ALSO: production and precision cut and ground spurs, sprockets, helicals, worms and wormgears; straight and spiral bevel gears and racks.

AMGEARS, INC.
CHICAGO 38, ILLINOIS
A SUBSIDIARY OF HUPP CORPORATION
CONTRACT MANUFACTURERS
Detroit • Cleveland • Chicago

▼ BREVITY—Identify by IEN - 12290 if you write the maker ▼

TRUCK . . Box type assemblies use expanded metal in structural frame

Source: INDUSTRIAL ENGINEERING & MFG. CO.
50 Industrial St., Brinfield, Ind.



Model 4-A measuring 60 by 30 by 30 in. and Model 4-B measuring 60 by 30 by 48 in. are two new box-type trucks employing expanded metal in an angle-iron frame. Both are assembled on central rigid casters and swivel end units. All are ball bearing, 4-in. size, with fibre wheels. The truck measuring 48 in. in height has a drop door on one side to fill an opening that measures 57 by 22 inches.

▼ BREVITY—Identify by IEN - 12291 if you write the maker ▼

SPEED REDUCER . . In-line design for ¼ to 1 hp. motors to 1,800 rpm.

Source: UNIVERSAL GEAR CORP.
Martindale & 19th, Indianapolis 7, Ind.

Model 5-E is a new Heliocentric speed reducer with reduction ratio subject to specification and torque rating to 1,000 inch pounds. Input and output are in line in a housing that encloses the gearing. Overall length between the shaft ends is about 6 inches. Housing diameter is 5¼ inches. Base width is 6 inches. Shafts are mounted in anti-friction bearings.

▼ BREVITY—Identify by IEN - 12292 if you write the maker ▼

MARKING . . Metal tag machine bends tags for attachment to billets

Source: M. E. CUNNINGHAM CO.
99 E. Carson St., Pittsburgh 19, Pa.

Bending tool has been designed to form a 3½ by 2-in. metal tag over a smaller 1-in. unit carrying heat-identification numbers for steel mill use. The tool bends the larger tag into a U-shape that will retain the small tag and its attachment nail in place on a marking hammer nose. The hammer and tags are then struck against the billet to be marked to drive the nail into the billet and thus attach the tag.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 58*

▼ BREVITY—Identify by IEN - 12293 if you write the maker ▼

SMALL
PARTS
Cost less when made by
MULTI-SWAGE
The economy way to get a million small parts similar to these—

Examine the tubular metal parts shown here twice size. If you use anything similar . . . in large quantities . . . important savings can be yours. Send us the part and specs. Our quotation will show why the Bead Chain Company's MULTI-SWAGE Process has long been known as the most economical method of making electronic contact pins, terminals, jacks and sleeves. And, why more and more users of mechanical parts (up to ½" dia. and to 2" length) employ our facilities. WRITE for Data Bulletin.

Trade Mark

THE BEAD CHAIN MANUFACTURING CO.
59 Mountain Grove St., Bridgeport 5, Conn.
Manufacturers of the Endless Chain of a Thousand Uses

▼ BREVITY—Identify by IEN - 12294 if you write the maker ▼

AMAZING, NEW, WATERPROOF, GLASS-REINFORCED PAPER
GLAS-KRAFT
PROVIDES POSITIVE ALL-WEATHER PROTECTION

GLAS-KRAFT is one of the strongest, toughest, most flexible, reinforced papers known. It is the most waterproof reinforced paper available. Contains up to 315 ft. of continuous, specially treated glass yarns twisted into each square foot for all-directional reinforcement. Yarns are waterproof-bonded under heat and pressure between two plies of finest specification Kraft.

Glas-Kraft is supplied to the U. S. Government in quantity. It meets JAN-P-125 specifications for barrier wrapping material, Types E-1, E-2, E-3.

GLAS-KRAFT IS VERSATILE
- Wrapping & Packaging—Textiles, Machinery, Tires, Paper, Steels, Wire Stock, Cement, Chemicals, Furniture, etc.
- Storage—Indoor or Outdoor storage of motors, vehicles, machinery, building supplies and equipment . . . As temporary all-weather tarpaulins.
- Packing & Shipping—Unitized loading of freight cars . . . As case liners and shrouds for export and domestic shipping.
- Building & Construction—As a vapor barrier on side-wall sheathing, protective floor covering, or over subfill.
- Concrete Curing—For concrete floors, driveways, sidewalks and roads.

GET GLAS-KRAFT
Investigate Glas-Kraft when you want an industrial paper to perform where others fail. Available in rolls up to 96 inches in width. Three grades. We also manufacture the revolutionary new Glas-Tape and Glas-Kraft Sealing tape for the corrugated container industry.

A Better Paper Product By

GLAS-KRAFT, Inc.
LONSDALE, RHODE ISLAND
Write today for sample swatches and prices.

▼ BREVITY—Identify by IEN - 12295 if you write the maker ▼

Job time records are VITAL— CALCULAGRAPH FIGURES THEM ACCURATELY, AUTOMATICALLY

COMPUTES—
TOTAL ELAPSED TIME
PRINTS—
STARTING TIME
FINISHING TIME
TOTAL TIME

One CALCULAGRAPH figures and prints cards for entire shop

Complete, accurate records of every job in shops or the largest departments of production plants can be computed and printed on one Calculagraph. Easily read, permanent Calculagraph time records eliminate the inaccuracies of hastily penciled, manually figured time cards. Calculagraphs are precision instruments with electric or spring drives.

Multiple recording on any number of cards—in any sequence

Calculagraphs handle any number of cards and compute the elapsed time for any number of different jobs. No sequence need be followed—time can be recorded as required on any card. Elapsed time is automatically figured and printed simultaneously with finishing time. Calculagraph is the most economical way of quickly obtaining absolutely accurate job time for computing costs. Now in use in plants and shops, everywhere.

Learn how CALCULAGRAPH can save you money and eliminate costly errors in your cost accounting—write, today, for literature.

CALCULAGRAPH
COMPANY • INCORPORATED
HARRISON • NEW JERSEY

SINCE 1892—STANDARD EQUIPMENT IN THE TELEPHONE INDUSTRY THROUGHOUT THE WORLD

▼ BREVITY—Identify by IEN - 12297 if you write the maker ▲▼

Bag Closing Machines for Every Need . . .

. . . from UNION SPECIAL'S Complete Line! . . .

For lower production costs . . . stronger, neater closures . . . ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! In the Union Special line, it's easy to find the right unit to meet your particular requirements: 25 different styles of machines! 10 styles of sewing heads! For any kind and size of bag—paper, cotton, burlap, or jute. ASK FOR ILLUSTRATED BULLETIN No. 200.

SEND FOR THIS ILLUSTRATED BULLETIN!

Union Special MACHINE COMPANY
410 North Franklin St.
Chicago 10, Illinois

▼ BREVITY—Identify by IEN - 12298 if you write the maker ▲▼

Save Time, Labor, Dollars!

TEST • STUDY • CONTROL VISCOSITY

As Simply, Quickly and Easily as Taking Temperature Readings

Just a flick of a switch, then read the Brookfield dial, and you have your viscosity determination in centipoises. The whole operation, including cleaning up, usually takes *less than a minute.*

Available in a variety of models suitable for extremely accurate work with both Newtonian and non-Newtonian materials, Brookfield Viscometers are portable and plug in any A.C. outlet — *can be used in Lab, Plant or both.*

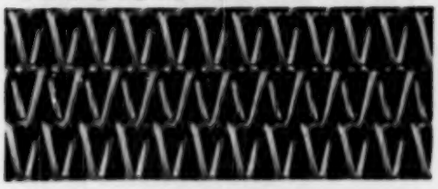
Write today for fully illustrated catalog showing Brookfield Viscometers adaptable to any viscosity problem *from less than one to 32,000,000 centipoises.*

BROOKFIELD COUNTER-ROTATING MIXER — Two concentric, oppositely rotating shafts, propeller equipped and driven by two motors, produce an annular flow and up to 48,000 scissor-like cuts/minute. Enable exceptionally fast, effective and efficient laboratory mixing. *Not* a "stirrer." Write for Brookfield MIXER brochure.

Brookfield ENGINEERING LABORATORIES, INC.
239 Parker St., Stoughton, Mass.

▼ BREVITY—Identify by IEN - 12299 if you write the maker ▲▼

WISSCO BELTS



Cover a wide utility range

In a wide variety of applications—heat treatment of metals, glass and ceramics, and for processing foods and other products—Wissco Belts have demonstrated their ability to step up production and reduce handling costs.

Wissco Metal Processing Belts operate efficiently and dependably at temperature extremes from sub-zero to 2100°F.—are specially engineered to resist corrosion and abrasion.

Write for illustrated folder describing the adaptability of Wissco Belts and the many money-saving advantages they offer you.

WISSCO METAL PROCESSING BELTS CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Office and Plant—56 Sterling Street, Clinton, Massachusetts
Executive Office—500 Fifth Avenue, New York 18, New York
Sales Offices—Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • New York • Philadelphia
Pacific Coast—The California Wire Cloth Corporation, Oakland 6, California

▼ BREVITY—Identify by IEN - 12300 if you write the maker ▲▼

CLEANING . . Portable vacuum machine serves 1½ in. 35-ft. suction hose

Source: U. S. HOFFMAN MACHINERY CORP.
103 Fourth Ave., New York 3, N. Y.

Hoffro-Vac No. 15 is a new portable machine to pick up dry dirt and litter and deposit them in a removable container. It is driven by a 1½-hp. motor as compared to the larger No. 30 machine with a 3-hp. motor previously described IEN-3156-50. The new machine is particularly suited for narrow aisles and restricted areas. It has adequate capacity for continuous operation. Overall dimensions are 21½ by 40½ by 43 inches.

The motor driven blower is a multi-stage centrifugal unit with aluminum housing and impellers. It draws in dust-laden air through the suction hose and bag-type separator in the housing. Inlet to the separator is tangential with dust entering below the bag-plate level so there is no direct impact on the bags. The dust falls into a container at the bottom that can be released by operating a quick-acting lever when it is to be removed for emptying.

Assembly is on rubber-tired roller-bearing wheels. Handles on the housing assist in moving about in confined areas. The blower shaft rides sealed and factory-lubricated ball bearings that require no servicing. Bulletin A-814, 4 pages, presents illustrated description with cutaway captioned view of the machine. Specifications are included.

▼ BREVITY—Identify by IEN - 12301 if you write the maker ▲▼

BENDING . . Forming machine to make one piece sheet metal cabinets

Source: CYRIL BATH CO.
6935 Machinery Ave., Cleveland 3, Ohio

New machine is known as the company's Open-Throat Single-Wing Tangent Bender. It is available to specification to perforate, make initial short-stroke forms and then to "wipe" bend one corner at a time in manufacture of sheet-metal housings. Dies and associated tools are mounted in a head provided with required initial vertical movement to bring the dies down to the work as it rests on a pivoted bending plate and with a final power movement through 1 inch. The bending wing is then actuated to make the major corner bend and wipe out any wrinkles.

Power is applied by pneumatic or hydraulic pressure in built-in cylinders for the vertical head movement and the 17-ton perforating action. It also rotates the bending wing. Latches on the head engage lever arms at both ends of the bed to pull the head down. The latches release to provide work-removing clearance at completion of the operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 12302 if you write the maker ▲▼

ALLIS-CHALMERS size 0-3 across-the-line starters have double break silver to silver contacts that increase interrupting capacity and eliminates "dressing" contacts. Unhindered straight line vertical action eliminates wearing parts. Design and construction are engineered for long life — easy inspection. The only tool needed for inspection of replaceable parts is a screw driver.

This kind of quality engineering and easy maintenance design goes into all Allis-Chalmers Starters. And there is an A-C Starter for every motor need, regardless of application, horsepower or type. Send for bulletin 14B7132 which describes across-the-line starters for motors to 600 hp at 550 volts, and bulletin 14B6410 describing 2300 to 5000 volt motor starters. A-3136

ALLIS-CHALMERS, 909A SO. 70 ST.
MILWAUKEE, WIS.

ALLIS-CHALMERS A-C

▼ BREVITY—Identify by IEN - 12303 if you write the maker ▲▼

Jacketed Pumps

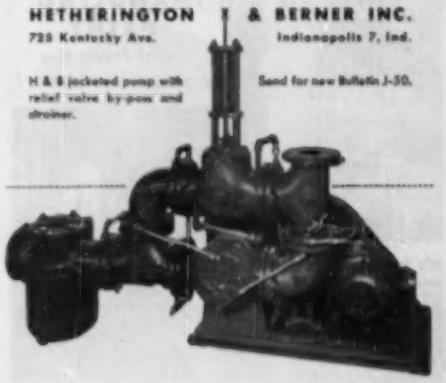
for handling viscous materials

Pumps for H & B Jacketed Systems are made especially for us to fit the flanges of H & B jacketed fittings. These pumps are engineered to provide maximum efficiency in handling viscous materials. H & B fittings are designed with a double wall forming an all-over jacket, completely insulating the interior line, with no dead spots or unprotected places.

HETHERINGTON & BERNER INC.
725 Kentucky Ave. Indianapolis 7, Ind.

H & B jacketed pump with relief valve by-pass and strainer.

Send for new Bulletin J-30.



▼ BREVITY—Identify by IEN - 12304 if you write the maker ▲▼

THIS BOOK CAN SAVE YOU MONEY ON QUALITY NAME PLATES

Etched or lithographed on metal, Ecoa quality name plates add sales appeal to your product—look better, longer. You can save money by using one of the 5000 shapes and sizes for which we have dies in stock. Ask us to quote on your name plate requirements. If you can use this book of stock shapes and sizes, write for it on your letterhead.

ETCHING COMPANY OF AMERICA
1520 Montana St., Chicago 14, Ill., Dept. F-12
SUBSIDIARY OF DOUBE MANUFACTURING CORPORATION, MILWAUKEE, INDIANA

▼ BREVITY—Identify by IEN - 12305 if you write the maker ▲▼

SINGLE-ACTING AIR CYLINDERS

1"	...	½"	½"
2½"	... 1"	2"	2" 1" 2"
3"	...	...	½" 2"
4"	... 2"	2½"	2"
— STROKE —			
5"	...	3"	3"
6"	...	3"	3"
BORE Horizontal			Vertical

NEW CATALOG READY!
Complete line of simple, adaptable, compact spring-return air cylinders. Cut costs and speed up production the modern, Air Power way. Write today.

MEAD SPECIALTIES COMPANY
4114 N. KNOX AVE., Dept. EA-120, CHICAGO 41, ILL.

▼ BREVITY—Identify by IEN - 12306 if you write the maker ▼

Introducing the...

Alemite Versatal

SPRA-KING

A NEW METHOD FOR HANDLING PAINT

right from the original container!

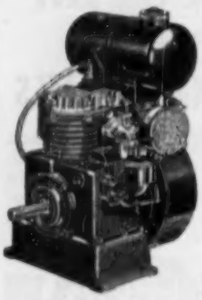
It's fast! No shutdown for refill!

FREE—write now for literature giving full data. Alemite, Dept. B-130, 1850 Diversey Pkwy., Chicago 14, Illinois.

ALEMITE Versatal

Another Product of Stewart-Warner

▼ BREVITY—Identify by IEN - 12307 if you write the maker ▼



Four-Cycle Air-Cooled

KOHLER ENGINES

- Compact
- Quick-Starting
- Reliable

MODEL K7-1 1½ H. P. 4-cycle, single cylinder, air-cooled. Length 13", width 14", height 17", Weight 38 lbs.

POWER FOR:
Farm Equipment
Garden Tractors
Water Pumps
Concrete Mixers
Construction Equipment
Conveyors
Hoists
Compressors
Sprayers
Motor Bikes
Scooters
And other uses.

Kohler Engines are designed, engineered and built to give the same dependable, economical service that has won world-wide acceptance for Kohler Electric Plants in construction and other industries. Made in several sizes, they are suited to a wide range of uses. Kohler engineers will gladly assist in working out applications for your particular requirements. Write for information. Kohler Co., Kohler, Wisconsin. Established 1873.

KOHLER OF KOHLER

Plumbing Fixtures • Heating Equipment • Electric Plants • Air-cooled Engines

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FREE!

FACTS YOU SHOULD KNOW ABOUT PLASTICS

This booklet is full of practical, helpful information about molded plastics. It gives you an idea of what plastics are good for, as well as their limitations. It discusses some of the important "do's" and "don'ts" in designing . . . explains mold-making, molding and finishing . . . gives, in chart form, the characteristics of various molding materials. And it's profusely illustrated. In short, it contains the kind of information you'll want whenever your job might call for molded plastics. So . . . write for your free copy today . . . on your business letterhead, please. Meanwhile, let us discuss your current molded plastics needs with you or, better yet, send us prints. We'll submit quotations promptly...without obligation.

CHICAGO MOLDED PRODUCTS CORPORATION

1031 N. Kolmar Ave., Chicago 51, Ill.

▼ BREVITY—Identify by IEN - 12309 if you write the maker ▼

PRESS . . Open back inclinable, rates 15 ton, has 2 in. standard stroke

Source: SALES SERVICE MACHINE TOOL CO. 2361-65 University Ave., St. Paul 4, Minn.

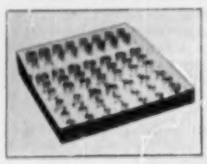
No. 1½ is a new inclinable 15-ton press occupying a 23 by 66-in. floor space and weighing 1,100 pounds. It is designed to operate at 160 rpm. with a ¾-hp., 1,140-rpm. motor. Bolster area is 10 by 14½ in. Bolster to slide with the stroke down and adjustment up is 6¾ inches. Throat depth is 5½ inches overall.

The press is equipped with the company's sliding-key clutch, a 4-point engagement ring and a flywheel mounted on roller bearings. The crankshaft measures 1½ in. at its bearings, 2⅜ in. at the pin.

▼ BREVITY—Identify by IEN - 12310 if you write the maker ▼

WRENCH . . Thin wall sockets for hexagon nuts, 5/16 to ¾ inch

Source: PROTO TOOLS 2207-11 Santa Fe Ave., Los Angeles 54, Calif.

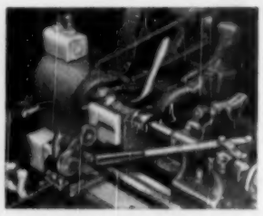


Chromium plated alloy steel is employed in construction of twenty new single-hexagon wrench sockets. They are for use in restricted locations. They apply on undersize nuts and those that are damaged without danger of slipping. They will not mark brass or other soft materials. Seven of the twenty in sizes from 5/16 to 11/16 in. have ⅜-in. square drive. Six from ⅜ to 11/16-in., extra deep, also have ⅜-in. drive ends and seven from ⅝ to ¾ in. have ½-in. drive for standard wrenches.

▼ BREVITY—Identify by IEN - 12311 if you write the maker ▼

WINDING . . Bench type lathe and control for solder wire on spools

Source: SOUTH BEND LATHE WORKS 301 E. Madison St., South Bend 22, Ind.



New application of one of the company's bench-type lathes in connection with equipment to mount spools between centers, to feed solder wire for winding and to control the weight by electronic means will wind 216 one-pound spools of the wire per hour. Accuracy is within ¼-oz. overweight. The lathe provides the spindle drive and adjustment of longitudinal feed and reverse to lay the wire of given diameter in the spool.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

▼ BREVITY—Identify by IEN - 12312 if you write the maker ▼

NOW!

a really new kind of time recorder

THE Cincinnati CLIPPER

World's First and Only Consecutive Spacing, Up-the-Card Print Recorder

Cincinnati pioneers again . . . with a *really new* time recorder that furnishes payroll and job cost records *consecutively spaced, up-the-card!* This means "goodbye" to overprints—faster, more accurate record audit by direct subtraction! A host of other new features, too, for performance and reliability unequalled by any other recorder. Ask your CTR distributor for a demonstration.

FREE ON REQUEST—Bulletin CTR-1.
A few select distributorships open. Write for details.

THE CINCINNATI TIME RECORDER COMPANY

Dept. IEN-12 Cincinnati 14, Ohio

Pioneer in the Development and Manufacture of Time Control Equipment Since 1886

▼ BREVITY—Identify by IEN - 12313 if you write the maker ▼

FREE: HOW TO CUT COSTS WITH RESISTANCE WELDING!

This Book is Full of Ideas For You: dozens of actual plant studies of *Resistance Welding* of everything from roller skates to racing cars. Methods, machines, jigs, fixtures, facts, figures are discussed and illustrated. You are welcome to a free copy of this interesting and educational booklet "Resistance Welding at Work" without any obligation whatsoever. Just write to:

SCIAKY

SCIAKY BROS., INC., 4911 W. 67th St., CHICAGO 38, ILL.

▼ BREVITY—Identify by IEN - 12314 if you write the maker ▼

BREAK the BULK Material BOTTLENECK

IN YOUR PLANT WITH Handy, Efficient **TOTE*** SYSTEM

The NEW Improved Method now revolutionizing BULK MATERIALS Handling in many industries

Modernizing methods for handling materials in bulk has become the watch-word of progressive industries from coast to coast. For the first time in generations, TOTE SYSTEM* provides a practical, efficient, economical answer to most, if not all, your bulk materials handling, shipping and storage problems.

Briefly, TOTE is a system for handling such bulk materials as flour, sugar, cement, carbon black, paint pigment, powdered milk, and other dry granular or powdered materials, in convenient, gleaming 74 cu. ft. aluminum containers known as "TOTE BINS*". Filling and discharging equipment together with the bins, comprise the TOTE System. Advantages gained: elimination of sources of contamination and deterioration; prevention of rodent and insect infestation; stopping of container losses through breakage, spilling or sifting; elimination of disposable container expense; saving on damage claims, pilferage losses; retention of original quality of product. These are but a few of the important advantages you will enjoy once TOTE SYSTEM* goes to work for you.

Many industries throughout the nation are enthusiastic users of TOTE SYSTEM*. Let us send you their comments based on actual experience. Write at once for this and other detailed, illustrated information.

*Both TOTE and TOTE System Reg. U. S. Pat. Off.

TOTE SYSTEM, Inc.
760 So. 16th Street, Beatrice, Nebr.
Without obligation, send me information on TOTE

Name _____
Firm _____
Address _____
City _____ State _____

▼ BREVITY—Identify by IEN - 12316 if you write the maker ▲▼

Another Bristol First!

Accurate Mechanical Recording and Controlling of Absolute Pressure

IN RANGES AS LOW AS 0 TO 6 MM.!

Now you can get a direct reading of pressure above zero absolute, inherently corrected for barometric variations, with far greater accuracy than ever before.

Bristol's new Series 500 Low-Range Absolute Pressure Recording Gauge uses a *single* calibrated bellows, evacuated to practically a perfect vacuum, enclosed in a pressure-tight housing. *No compensation needed* for barometric pressure!

Available for recording, pneumatic or electric controlling, and pneumatic or electric remote transmission. Write for Bulletin G620.

THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn. (The Bristol Company of Canada, Ltd., Toronto, Ont.)

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

▼ BREVITY—Identify by IEN - 12317 if you write the maker ▲▼

Cut Steam Costs!

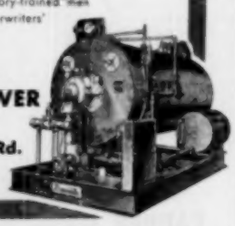
ORR & SEMBOWER

***Powermaster*®**

STEAM GENERATORS

15 to 500 H.P. at pressures to 200 p.s.i.—for light oil, heavy oil, gas or combination gas-oil firing—give you cost-cutting features like these . . .

- Low fuel consumption through high efficiency
- Packaged design saves excessive installation costs
- Automatic operation frees engineer for other duties
- Mounted on steel base—no bricking required
- Delivered fully wired and factory-tested
- Widespread service by factory-trained men
- A.S.M.E. constructed—Underwriters' Laboratories approved



Get Catalog — Write

ORR & SEMBOWER INC.

860 Morgantown Rd.
Reading, Pa.

▼ BREVITY—Identify by IEN - 12318 if you write the maker ▲▼

Want to know more about GAS ANALYSIS?

READ THIS NEW 8-PAGE ENGELHARD BULLETIN

Look at these typical data-packed pages

YOU WILL FIND a wealth of material on a wide range of gas analysis problems and their solutions in the new Engelhard 8-page illustrated bulletin. It explains how Engelhard equipment provides complete, sensitive, accurate analyses by the proven thermal conductivity method. The bulletin also contains a *valuable thermal conductivity table* that you will want to keep for handy reference. *Write for your free copy today. Ask for Bulletin 800A.*

Please send me FREE copy of Bulletin 800-A on Gas Analysis.

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Company .....

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CHARLES ENGELHARD, INC.
850 PASSAIC AVENUE EAST NEWARK N. J.

▼ BREVITY—Identify by IEN - 12319 if you write the maker ▲▼

FIRST AID . . Breathing apparatus to produce artificial respiration

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Facepiece made of rubber and plastic in this new Pneolator is positioned on a victim of any kind of asphyxiation. It connects through two valves and 4-ft. lengths of corrugated rubber tube. Oxygen is administered through one tube with positive pressure at regular intervals. The other is for oxygen flow when the victim inhales and shut-off when he exhales.

The valves interchange delivery automatically as determined by the victim's breathing or lack of it. The 22 cu. ft. oxygen cylinder and regulator are carried in the same case in which the apparatus is packed when it is not in use. The complete assembly weighs 41 pounds.

▼ BREVITY—Identify by IEN - 12320 if you write the maker ▲▼

STAPLING . . Hammer type tool drives ¾ in. staple, 1/16 in. wire

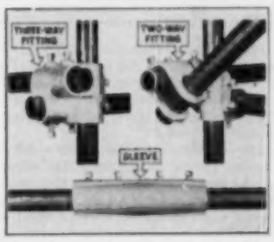
Source: BOSTITCH INC.
925 Mechanic St., Westerly, R. I.

Type H4 Heavy Duty is a new hammer type stapling tool with which a worker can drive a ¾-in. galvanized wire staple so it heads down solid with a single blow. The staple is made of 1/16-in. wire flattened to .07 by .05 in. and designed so the legs diverge as they are driven in. Weight is 36 ounces. The magazine takes 50 staples.

▼ BREVITY—Identify by IEN - 12321 if you write the maker ▲▼

SCAFFOLD . . Malleable fittings and standard unthreaded 1 in. pipe

Source: AMIDON SALES CO.
Box 61-A, Elyria, Ohio



Two and three-way fittings and a sleeve are the three basic fittings on which the company's new scaffolding is based. These fittings are equipped with hardened set screws and apply on 1-in. pipe cut to required length. Casters are available for application with the sleeve for portable assemblies. The fittings are illustrated with typical assemblies in 6-page Bulletin 501.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12322 if you write the maker ▲▼

More for your money!

New STERLITED WHEELS — with sealed-in ball bearings that keep grease in, dirt out and eliminate axle wear—make American Hand Trucks a better buy than ever! And most popular models now sell for less than before!

The side rails and cross bars of these familiar red trucks are channel-section steel for hardest service. Pressed-steel bolted construction keeps maintenance costs down. Light weight and fingertip balance make them the easiest-handling trucks you can buy!

Choose American Hand Trucks from 50 types and sizes for most efficient material handling at lowest cost . . . stocked by distributors everywhere.

AMERICAN PRESSED-STEEL HAND TRUCKS

The American Pulley Company

4248 WISSAHICKON AVE., PHILA. 29, PA.

Please mail free American Hand Truck Bulletin to

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COMPANY _____

ADDRESS _____

CITY _____ ( ) STATE _____

▼ BREVITY—Identify by IEN - 12323 if you write the maker ▲▼

DISTRIBUTED HEAT or CONCENTRATED HEAT

WHICH WOULD YOU PREFER for melting compounds?

Here's how all Sta-Warm tanks are wired to distribute not more than 5 watts of heat per square foot of tank sidewall and bottom area.

Avoid high-wattage concentrated heat in order to avoid burning and spoiling tank contents.

This principle of good design is found in every Sta-Warm compound and soft metal melting tank or pot. It provides the basic reason why Sta-Warm heaters are most economical when every cost factor is considered. It constitutes the one all-important reason why your plant should standardize on Sta-Warm.

In addition, you will find tank capacities, shapes, accessories to meet your requirements in the Sta-Warm catalogs. For unusual applications, Sta-Warm will engineer and build special units to fit your job.

Why not outline your problem today to Sta-Warm engineers? Address *Solar Engineering Dept.*

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST. • RAVENNA, OHIO

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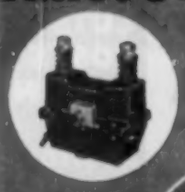
There's a SYNTRON "Powerful Digital" ELECTRIC VIBRATOR



To Keep These Stubborn Materials Free Flowing

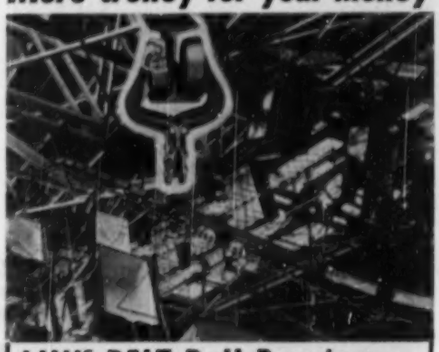
Whether It's a 1-cu.-ft. Hopper Or a 100-Ton Storage Bin

WRITE TO

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

▼ BREVITY—Identify by IEN - 12325 if you write the maker ▲▼

More trolley for your money



LINK-BELT Ball Bearing Overhead Conveyor Trolley

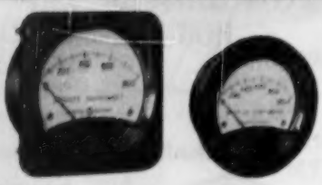
- Drop forged steel wheel and bracket
- Simple in design; fewer parts; less maintenance
- Unusually high load bearing capacity
- Bearings adequately lubricated and sealed
- Operates smoothly and quietly with high efficiency
- Quickly installed on new or existing systems
- Users report remarkably trouble-free operation

Folder 2341-B gives full details, send for your copy today. ▶

LINK-BELT COMPANY
Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and Distributors in Principal Cities.

▼ BREVITY—Identify by IEN - 12326 if you write the maker ▼

NOW AVAILABLE — IN *NINE* STANDARD TEMPERATURE RANGES



Thermocouple Thermometers

You can now get G-E thermocouple thermometers, Type DO-71, in nine standard temperature ranges, covering the full span from 0-to-400F to 0-to-2500F. And in each range you get the same quick, accurate indication remotely—and economically.

The indicators can be located up to 100 feet from the temperature source. Response is nearly instantaneous. Accuracy of standard instruments is plus or minus two percent of full scale. Applications are unlimited.

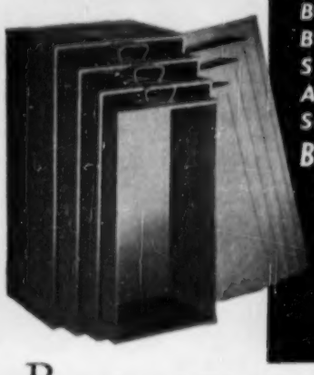
Full information is contained in our booklet "G-E Temperature Indicators," GEC-565A. Write for your copy today. *Apparatus Dept., General Electric Company, Schenectady 5, New York.*

GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 12327 if you write the maker ▼

GPX

CUTS COSTS AGAIN! . . . BUILD BETTER STORAGE AND SHIPPING BOXES WITH GPX



BECAUSE the armor-hard plastic surface of GPX is part of the plywood itself—not merely an added surface layer—it is the preferred material for tote boxes, tool lockers, storage bins and shelves. Good for a lifetime of hard wear, GPX resists the destroying effects of contact with the sharp edges and corners of industrial equipment.

Ideal for countless industrial uses, both in and around any kind of plant; it will pay you to investigate GPX today.

GPX is Weatherproof	GPX is Water Resistant
GPX is Abrasion Resistant	GPX is Stain Resistant
GPX is Vermin Resistant	GPX is Smooth
GPX is Extra Strong	GPX is Workable
GPX is Durable	GPX is Attractive

GEORGIA—PACIFIC PLYWOOD & LUMBER CO.

Wholesale Distribution Yards in BOSTON • CHICAGO • PHILADELPHIA • PORT NEWARK

FOR COMPLETE DATA, FILL IN AND MAIL THIS COUPON TODAY

Georgia-Pacific Plywood & Lumber Co.
1256 Southern Finance Building
Augusta, Georgia

NAME.....
FIRM NAME.....
FIRM ADDRESS.....
.....
POSITION.....

Please send me the GPX Use Folder

▼ BREVITY—Identify by IEN - 12329 if you write the maker ▼

GRINDING . . Plain and roll machines with 16, 20 and 24 in. swing capacity

Source: CINCINNATI MILLING & GRINDING MACHINES INC.
Marburg & Kline Sts., Cincinnati 9, Ohio

Three sizes have been added to the company's lines of plain and roll grinding machines. Swing capacities are 16, 20 and 24 inches. The plain machines are built in seven lengths in 2-ft. intervals from 48 to 192 inches. The roll-grinding machines are in the same lengths to 168 inches. Drive in each case is by a 20-hp. motor for the wheelhead, 2 or 3 hp. for the headstock and 1½ hp. for the table.

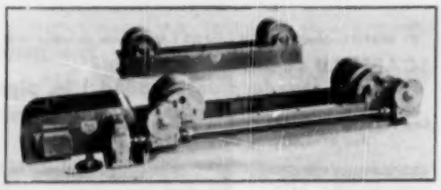
Filmatic bearings are used for the spindle to produce wedge-shaped oil films on which the spindle rides. A dc. motor with electronic control from an ac. source drives the table in stepless adjustment from 3 to 120 ipm. The table decelerates automatically at the end of its stroke to eliminate reversal shock. Tarry can be adjusted independently. The headstock is a dead-spindle unit driven by a dc. motor for a range of speeds.

Coolant flow and spindle rotation start and stop together with the table traverse or independently. Important bearings are lubricated automatically. An individual circulating system supplies filtered oil to the spindle bearings. A second circulating system lubricates the table and cross ways.

▼ BREVITY—Identify by IEN - 12330 if you write the maker ▼

WELDING . . Work positioner rolls rate 75 ton with rubber tires on wheels

Source: WORTHINGTON PUMP & MACHINERY CORP.
423 Worthington Ave., Harrison, N. J.

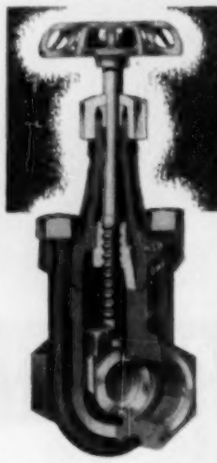


Model 75 is a new assembly of motor-driven and idler rolls to support and position cylindrical work for arc welding. The shafts are mounted on anti-friction bearings. The driven unit is operated by a 5-hp. motor and variable-speed transmission for a standard range between 6 and 56 in. per minute. Control is by pushbutton on an extension cord.

Overall length is a little more than 14 feet. Base width of the main frame is 32 inches. Height to the top of the wheels is 26½ inches. Distance between wheels is 26 to 87½ in. in adjustable assembly for work ranging from 1½ to 14 ft. in diameter. Change requires substitution of a drive shaft of suitable length between two chain couplings. The shafts are supplied. The idler frame measures about 10 ft. in length by 30 in. in width. It supports the rolls as illustrated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12331 if you write the maker ▼



DESIGNED FOR TROUBLE-FREE SERVICE

JENKINS U-BOLT GATE VALVE

Sizes — ¼" to 3"
Bronze Mounted or All Iron

16 Advanced Features

You can't beat the Jenkins U-Bolt Gate for simplified design, rugged construction, and economical maintenance. Removable Bonnet-Saver Bushing can be renewed when threads become worn, restoring entire bonnet to original efficiency. Cleaning is easier with removable bushing.

These features—plus many others—make the Jenkins U-Bolt Gate a favorite for any services where extra endurance and easy maintenance are essential. Jenkins Bros., 80 White St., New York 13.

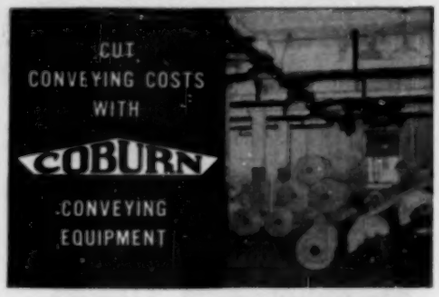
Complete details and specifications on request

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

TYPES, SIZES, PRESSURES, METALS FOR EVERY NEED

▼ BREVITY—Identify by IEN - 12332 if you write the maker ▼



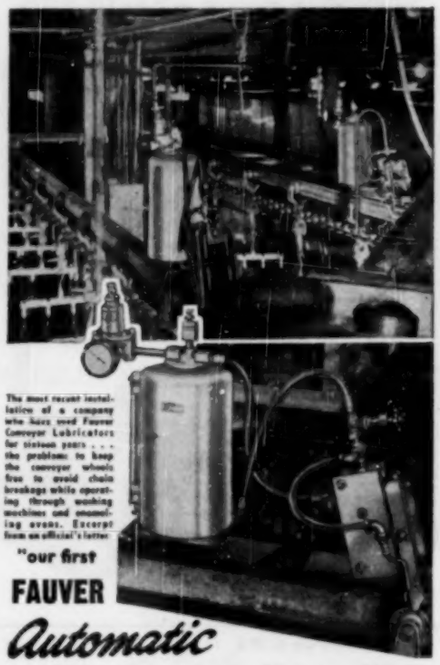
You can lower costs, speed production and reduce accident hazards with Coburn—the original enclosed overhead monorail. Sectional design permits easy installation, rearrangement or extension, as required. Coburn Enclosed Track does not obstruct floor space, requires very little headroom, simplifies spotting of work directly over machines. Can be used with hand chain or electric hoist. Carries loads up to 3000 lbs. manually or power operated.

Write today for catalog on Enclosed Track, Bracket-type Jib Cranes, Travelling Crane and Monorail installations. Engineering help available without obligation.

COBURN PRODUCTS CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Engineering: 56 Sterling Street, Clinton, Massachusetts
Executive Office: 500 Fifth Avenue, New York 18, New York
Sales Offices: Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • Philadelphia
Pacific Coast — The California Wire Cloth Corporation, Oakland 6, California

▼ BREVITY—Identify by IEN - 12333 if you write the maker ▼



The most recent installation of a company who have used Fauver Conveyor Lubricators for sixteen years . . . the problem: to keep the conveyor wheels free to avoid chain breakage while operating through washing machines and enameling ovens. Excerpt from an official's letter.

"our first FAUVER *Automatic* CONVEYOR LUBRICATOR was installed in 1934"...

"the conveyor is 3700 feet long and goes through enamel ovens so lubrication was a serious problem. Several types of lubricators were tried without success. We resorted to manual application of oil which was an expensive item. This was necessary because when a sufficient number of wheels froze, the chain would break, meaning a cessation of production . . . This Automatic Trolley Lubricator now keeps the wheels well oiled, the oil is applied in a mist so that it does not get on the enameled work and those former mechanical troubles are eliminated" . . . . there are also **FAUVER AUTOMATIC GREASE** Lubricators driven by contact with the trolley wheel; operates on wheels equipped with or without GREASE fittings—we *specialize in conveyor lubrication problems —send for complete information.*

J. N. FAUVER Company, Inc.
47 W. Hancock DETROIT 1

▼ BREVITY—Identify by IEN - 12335 if you write the maker ▼

IN A HURRY?

Call

U. S. Steel Supply Company

for Top Quality Welding Supplies

■ All our warehouses have large stocks of welding supplies on hand, including Stainless Steel Electrodes, Mild Steel Electrodes, Hard Surfacing Electrodes and Ni-Rod for cast iron welding.

Whatever you need . . . Welding Rods, Welding Machines, Havens Protected "C" Clamps, Protect-O-Metal for eliminating weld spatter, Galv-Weld Alloy for regalvanizing, or other top quality welding supplies . . . phone, write or wire our nearest office. You'll get what you order in the shortest possible time. That's Service Plus!

WHEN YOU DEAL WITH US, YOU GET Service Plus!

UNITED STATES STEEL SUPPLY COMPANY

Warehouses Coast-to-Coast

Headquarters Offices: 208 S. La Salle St. Chicago 4, Ill.

UNITED STATES STEEL

▼ BREVITY—Identify by IEN - 12336 if you write the maker ▼

IF YOU USE PROCESS STEAM—

1. YOU CAN KEEP YOUR PROCESS EQUIPMENT OPERATING AT HIGH, UNIFORM TEMPERATURES.
2. YOU CAN SAVE AT LEAST 10% ON FUEL.
3. YOU CAN REDUCE DRYING TIME.
4. YOU CAN DRAIN CONDENSATE COMPLETELY FREE OF ENTRAINED AIR AND RETURN IT TO THE BOILER AT PRACTICALLY THE SAME TEMPERATURE AS WHEN IT LEFT.
5. NO PIPE CHANGES REQUIRED — other than connections into existing closed circuit.
6. NO GADGETS TO ADJUST OR CAUSE DELAY.
7. COMPLETELY AUTOMATIC IN OPERATION OVER ENTIRE PRODUCTION RANGE — from start up to end during full speed.

A 24 page book — Publication 3250 — will be of value to you in your steam process problems. Write for it today.

COCHRANE CORP., 3152 N. 17th St., Phila. 32, Pa.

COCHRANE C-B SYSTEM OF CONDENSATE DRAINAGE CONTROL

▼ BREVITY—Identify by IEN - 12337 if you write the maker ▼

OHIO Tramrail moves hot iron from ladle into elevator safely and at low cost in this foundry. Versatility makes OHIO equipment equally adaptable for fragile products as well. For low-cost, efficient handling with maximum factors of safety investigate OHIO Tramrail Systems today.

OHIO TRAMRAIL SYSTEMS

THE FORKER CORPORATION

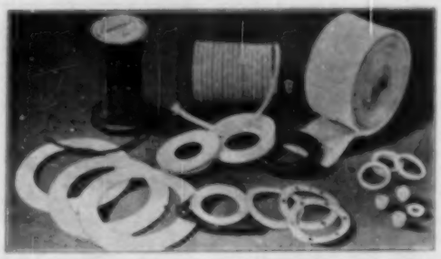
Cleveland 6, Ohio

TRANSFER BRIDGES CRANES TRAMRAIL SYSTEMS

▼ BREVITY—Identify by IEN - 12338 if you write the maker ▼

SEALING . . Gaskets and packings made of Teflon are chemically inert

Source: GARLOCK PACKING CO.
50 Gerlach St., Palmyra, N. Y.



Solid Teflon cut to specified shapes and sizes, "envelope" gaskets with a suitable inner material encased in Teflon, braided and molded packings for valves, rods and shafts make up a new addition to the company's line of sealing materials.

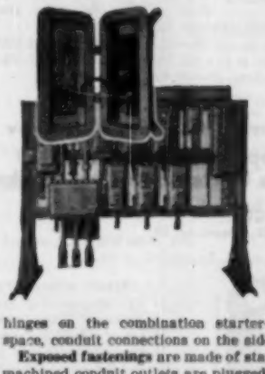
The Teflon is unaffected by acids, is resistant to attack by organic solvents and alkali solutions. It will not seal molten alkali metals. The material remains serviceable in a temperature range between minus 90 and plus 500 deg. F. Coefficient of friction is low in normal temperatures. Insulating properties are excellent because of the material's low electrical power factor.

Rod and shaft packings range from ⅛ to 1 in. in section in a number of designs. Cups and circular envelope units are available in any dimensions to the equivalent of 21 in. in diameter. Sheet sizes range from 10 by 10 in. to 24 by 24 in. and from $\frac{1}{32}$ to 1½ in. in thickness. Bulletin, 8 pages, "Packings and Gaskets made of Teflon", presents illustrated data on available forms in which these gaskets can be supplied.

▼ BREVITY—Identify by IEN - 12339 if you write the maker ▼

MOTOR CONTROL . . Starters, breakers, enclosed design for hazardous locations

Source: RUSSELL & STOLL CO.
125 Barclay St., 11th Floor, New York 7, N. Y.



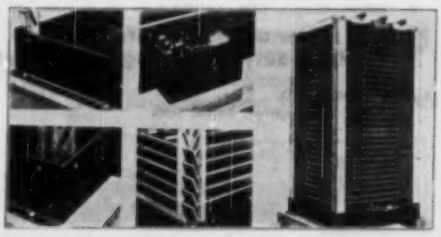
Ratings are from No. 0 to No. 4 in the company's recently improved line of explosion-proof enclosed motor starters and starters in combination with circuit breakers. The design features a non-freezing revolving shaft to operate the push-button and manual reset, rectangular housing for close spacing on a panel board, bolted cover for access to the hinges on the combination starter-breaker, ample wiring space, conduit connections on the sides, top and bottom.

Exposed fastenings are made of stainless steel. The factory-machined conduit outlets are plugged to exclude foreign matter. Individual units or completely assembled control centers as shown in the illustration are available to specification.

▼ BREVITY—Identify by IEN - 12340 if you write the maker ▼

REFRIGERATING . . Cooling tower absorbs heat from condensing water

Source: BINKS MFG. CO.
3122 Carroll Ave., Chicago 12, Ill.



Ten frame sizes are available in this new Type-H atmospheric spray cooling tower for refrigeration load from 3 to 35 ton. Each assembly includes a steel water basin with integral external float box and external anchoring flanges, hot-galvanized steel corner posts perforated to take wood or galvanized-iron louvers, top connecting angles for the posts and to provide support for the manifold under which the company's Rotojet clog-proof brass spray nozzles are assembled. The tower receives condensing water from the circulating pump serving the refrigerating installation.

Dimensions range from 3 by 3 by 6 ft. to 8 by 8 by 10 feet. Maximum capacity is 12 to 105 gpm. with pumping head at 22 to 26 feet. Detail information is contained in illustrated 4-page Bulletin 44, available upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 12341 if you write the maker ▼

Get this *NEW* UDYLITE FULL AUTOMATIC CATALOG *NOW!*

Hot off the presses in this new, complete catalog of Udylite Full Automatic Plating Machines. Descriptions and photographs of every type of Udylite automatic plating units—from the famed Single Row Full Automatic to the economical "Junior" are included in this booklet. Get the complete story on how Udylite machines are built—how they perform in the field—and how Udylite service guarantees the finest plating results. Call your nearby Udylite Technical Man today or write direct for your copy of the Udylite Full Automatic Catalog. Address: The Udylite Corporation, Detroit 11, Michigan.

PIONEER OF A BETTER WAY IN PLATING

THE Udylite CORPORATION DETROIT 11, MICHIGAN

▼ BREVITY—Identify by IEN - 12342 if you write the maker ▼

get the *LATEST DATA* on 4 alloys to combat corrosion

Every designer . . . every engineer . . . and every fabricator who is faced with the problem of selecting a high-strength material that will withstand severe chemical corrosion should have a copy of this new 40-page booklet. It tells the story of the four HASTELLOY alloys—what they are, how they are fabricated, and how they can be used to combat severe corrosion.

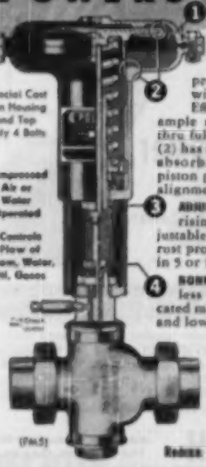
Ask for a copy of the booklet "HASTELLOY High-Strength, Nickel-Base, Corrosion-Resistant Alloys."

Haynes Stellite Division
Union Carbide and Carbon Corporation
General Offices and Works, Kokomo, Indiana

"Hastelloy" is a registered trade-mark of Union Carbide and Carbon Corporation.

▼ BREVITY—Identify by IEN - 12343 if you write the maker ▼

Get BETTER Control with POWERS FLOWRITE VALVES



VALVE TOP—Durable moulded neoprene diaphragm (1) has positive sealing head which provides increased sealing action with increasing control pressure. Efficient diaphragm form insures ample and constant operating power thru full travel. Piston Plate Assembly (2) has a free floating thrust plate which absorbs side thrust. Closely guided piston plate maintains stem in accurate alignment.

ADJUSTING SCREW—Ball bearing non-rising type with starting pressure adjustable from 0 to 17 psi. Has enclosed rust proofed steel spring for full travel in 5 or 10 psi. control pressure change.

BONNET ASSEMBLY—Polished stainless steel stem in preformed lubricated metallic packing insures long life and low hysteresis.

VARIETY of VALVE BODIES
Sizes ½" thru 8"

For line pressures below 250 psi. Rugged construction to withstand piping strains.
Write for Circular FMV

Reduce Maintenance with FLOWRITE VALVES

THE POWERS REGULATOR COMPANY

2727 Greenview Avenue, Chicago 14, Illinois

Established 1891 ★ Offices Over 50 Cities ★ See Your Phone Book

▼ BREVITY—Identify by IEN - 12344 if you write the maker ▼

LANSING SPARTAN TRUCK

Seventy years of experience have gone into the Lansing Spartan Truck, eliminating completely or reducing to a minimum unsatisfactory features of most other trucks.

Lansing Spartan Trucks are built to carry heavy loads and roll easily in any direction. Designed for extra long service under factory and warehouse conditions, the Lansing Spartan gives true, trouble free service.

The Lansing Spartan can be equipped with racks, boxes or other types of superstructure engineered to fit the users' needs and makes an ideal truck for use with warehouse trolley or cable car conveyor systems.

LANSING COMPANY

TRUCKS • TRAILERS • BARROWS • CASTERS • CARTS

"Keep Your Products on Wheels"

MAIN OFFICE AND FACTORY
LANSING, MICHIGAN
BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 12345 if you write the maker ▼

Only BAKER SCAFFOLDS give

for FAST SAFE

OFF-THE-FLOOR WORK!

A few inches make a lot of difference when placing a man at the proper height to work most efficiently. Baker Scaffolds are readily stacked for height and to cover any floor area . . . no "X-brace" construction allows them to span equipment and furniture. Easily handled by one man. Write today for Bulletin 496.

Distributors in principal cities.
Listed under Reexamination Service, Underwriters' Laboratories, Inc.

UL THE BAKER SCAFFOLD

BAKER-ROOS, INC.
602 W. McCARTY STREET
INDIANAPOLIS 6, INDIANA

▼ BREVITY—Identify by IEN - 12346 if you write the maker ▼

BOSTITCH H4 Heavy-Duty Stapling Hammer

Three Times Faster Than Hammer and Nails

EACH EFFORTLESS BLOW drives home a sturdy ¼" Bostitch staple. ONE-HAND FREE for more accurate placing of material. STAPLE LEGS SPREAD inside the work, putting them under tension for increased holding power. HAMMER WEIGHS only 2 lb, 4 oz with load of 50 staples. Quick and easy to load. WORKERS APPROVE . . . no mashed fingers . . . no mouth infection. WRITE FOR BULLETIN 212 . . . BOSTITCH, 458 Mechanic Street, Westerly, Rhode Island.

BOSTITCH fastens it better, AND FASTER with wire

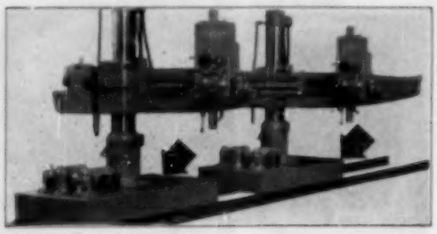
ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

Trade-Mark "Bostitch" Registered U.S. Patent Office and Foreign Countries

▼ BREVITY—Identify by IEN - 12347 if you write the maker ▼

DRILLING . . Track traversing base for company's radial drilling machines

Source: CINCINNATI GILBERT MACHINE TOOL CO.
3764-68 Beekman St., Cincinnati 23, Ohio



New base with traversing, clamping and coolant-pump controls has been developed for the company's line of radial drilling machines in 44 to 71-in. column sizes. The base measures 46 in. in width by 90 in. in length and rides on the company's standard horizontal boring-mill runways or on 100-lb. rails. Motor driven clamps secure set positions. The coolant pump on the base has its own motor also.

Power traverse is at 50 fpm. and employs a 1½-hp. motor for operation on ac. or dc. The motor drives a worm and gear reducer with reversing control and bevel gear connection to one of the base axles. Both ride Timken roller bearings.

▼ BREVITY—Identify by IEN - 12348 if you write the maker ▼

RELAY . . Miniature sealed design, 4-pole double-throw, 2 amp. 110-volt ac.

Source: HART MFG. CO.
108-12 Bartholomew Ave., Hartford 6, Conn.

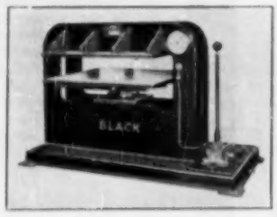
Plug-in or solder terminals can be supplied with this new aircraft type of miniature hermetically-sealed relay. It is built to withstand mechanical shock to 500 and to operate in a range between minus 65 and plus 200 deg. C. The interior is filled with a dry inert gas. Weight is 3.5 ounces. Approximate size is indicated.

Contact rating is 2 amp. on 28-volt dc. or on 110-volt 400-cycle ac. Overload rating is 12 amp. for a 20-sec. interval. The coil rates 150 and 300 ohms, 28-volt dc. and .1 ampere.

▼ BREVITY—Identify by IEN - 12349 if you write the maker ▼

PRESS . . Hand operated hydraulic, 15 to 100 ton, 6 to 12 in. stroke

Source: BLACK BROS. CO.
988-92 Ninth St., Mendota, Ill.



Steel plates in welded assembly are employed in the housing of this new press. The upper platen is welded to the head. The lower movable plated rides a power cylinder connecting to a head-operated pump at the side of the assembly. The cylinder is machined steel. A gage is secured to the housing to read applied pressure. Capacities range from 15 to 200 ton with stroke at 6 to 12 in. and platen areas from 12 by 12 in. to 24 by 96 inches. Die space can be specified.

▼ BREVITY—Identify by IEN - 12350 if you write the maker ▼

PUMP . . Motor driven centrifugal for sump duty, 20 gpm. against 20 feet

Source: DEMING CO.
184-88 Broadway, Salem, Ohio

Figure 4623 is a new motor-driven weight-controlled pump that will fit into a sump measuring 12 in. or more in diameter. It is designed for a 2-ft. sump depth, measures 39½ in. in height. The ½ hp. motor operates at 1,750 rpm. on 110-volt 60-cycle ac. Pipe connection measures 1¼ inches.

The impeller and casing are made of bronze. The stainless-steel shaft rides in a bronze bearing in the brass column. A perforated-brass strainer keeps foreign matter out of the suction at bottom of the casing. Control centers at a float switch operated by two small weights that are non-breakable and inert to common chemicals and soaps. The weights are suspended on a stainless-steel cable.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12351 if you write the maker ▼

QUIET PLEASE!

when you specify BOSTON gears

1951 Model COUPLINGS from Nearby Stock

Precision Machined three-piece construction with oil resistant, synthetic rubber insert that absorbs vibration and shock — assures QUIET, FLEXIBLE operation. Easy to install. Dust and dirt proof. In stock for shaft diameters from ⅜" to 1⅛". See Boston Gear Catalog No. 55.

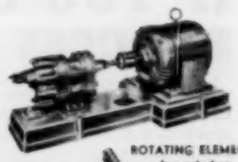
STOCKED BY 80 AUTHORIZED BOSTON GEAR DISTRIBUTORS

BOSTON gears stocks are News

BOSTON GEAR WORKS
63 HAYWARD ST., QUINCY 71, MASS.

▼ BREVITY—Identify by IEN - 12352 if you write the maker ▼

GEAREX ROTARY PUMPS



move more— for less!

. . . Provide more displacement per revolution because rotors do not transmit power—are designed to fulfill one function: moving material. Need less maintenance because (1) rotors never touch metal; (2) proper rotor clearance maintained by Sier-Bath precision cut timing gears.

ROTATING ELEMENT has only two moving parts!

ADDITIONAL ADVANTAGES

- Pulseless flow
- Vibrationless operation
- Low pressure on stuffing boxes
- Direct connected up to 1800 RPM
- Available in corrosion-resistant alloys
- Horizontal or vertical construction

INTERNAL BEARING TYPE (above) for lubricating liquids—EXTERNAL BEARING TYPE for non-lubricating liquids. Capacities: 1—550 GPM. Discharge: 250 PSI for viscous liquids, 50 PSI for water. SIER-BATH SCREW PUMPS for higher pressures and capacities. Write for booklet.

Founded 1905 — Sier-Bath — Member AGMA

GEAR and PUMP CO., Inc.

9258 HUDSON BOULEVARD — NORTH BERGEN, N. J.

▼ BREVITY—Identify by IEN - 12353 if you write the maker ▼

WHALE BRAND SCREW DRIVER

NO SLIP SUPER GRIP

A new design in husky Screw Drivers that can really "take it" . . . the blade, shank and shoulder are forged from ONE piece of Tool Steel. When your Repair Shop and Garage Mechanics take one of these sweetly balanced, rugged tools in their hands, they sell themselves—and quick! Made in a complete line of models and all sizes with square and round blades that run completely through selected hardwood and Pyraloid handles. Write for complete details on this fast-moving, long profit line. Ask for the catalog that describes these and other good FORSBERG Tools.

Send for the new Forsberg Catalog! WHALE Brand Screw Drivers, Hack Saw Frames and Blades, Coping Saw Frames and Blades, Band Saws, Breast Drills, Hand Drills.

Forsberg
MFG. CO., BRIDGEPORT, CONN., U.S.A.

▼ BREVITY—Identify by IEN - 12354 if you write the maker ▼

seamless – welded
carbon – alloy – stainless

TUBING SATISFACTION for ALL pressure and mechanical requirements

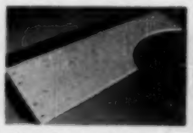
B&W TUBES

A good man to know

. . . Your B&W Tube Representative . . . because his factory training in "tube-technics", and specialized knowledge of applications may help you to uncover tubing economies in buying and applying carbon, alloy and stainless grades.

THE BABCOCK & WILCOX TUBE COMPANY
General Offices: Beaver Falls, Pa.
Plants: Alliance, Ohio and Beaver Falls, Pa.
Sales Offices: Alliance, Ohio • Beaver Falls, Pa. • Boston 16, Mass. • Chicago 3, Ill. • Cleveland 14, Ohio • Detroit 26, Mich. • Houston 2, Texas • Los Angeles 15, Calif. • New York 16, N. Y. • Philadelphia 7, Pa. • St. Louis, Mo. • San Francisco 5, Calif. • Syracuse 2, N. Y. • Toronto, Ontario • Tulsa 3, Okla.

▼ BREVITY—Identify by IEN - 12355 if you write the maker ▼



A part of a piece of **form equipment**, 7 2/16"x 22", with 32 holes and nibbled cut-out was finished including setup in only 12.01 minutes, subsequent pieces in **2.32 min.**

Above circle, 24" in diameter with OD nibbled and 9 holes punched was produced in only 4.36 minutes including setup and subsequent pieces in only **2.38 min.**

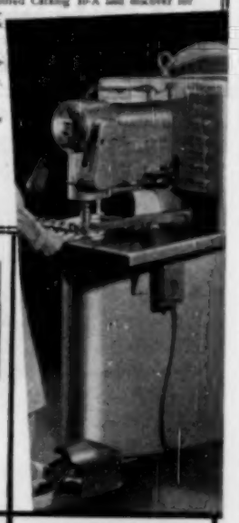
Can you match these
WALES FABRICATOR
TIME STUDIES with your present methods?

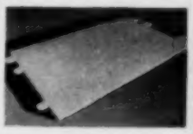
These time studies were made under actual production conditions with average operators and were taken at random from hundreds of time studied parts.

There is nothing like this revolutionary Wales Fabricator. It punches, notches and nibbles. Wales exclusive Hydra-New-Matic Drive is unique in its simplicity of design and operation . . . so unique, in fact, that vibrations and noise is practically eliminated at 165 strokes a minute. This drive plus the Wales patented "Quick-Change" System makes possible these startling "never-heard-of-before" time study figures.

IT'S TOO BIG A STORY TO TELL ON THIS PAGE, so write for fully-illustrated, functionally-colored Catalog 10-A and discover for yourself why production schedules of this Fabricator have been more than doubled.

WALES-STRIPPIT CORP.
George P. Wales, Chairman
301 PATON AVENUE, NORTH TONAWANDA, N. Y.
(Between Buffalo and Niagara Falls)
WALES-STRIPPIT OF CANADA LTD.
HAMILTON, ONTARIO
Specialists in Punching and Nibbling Equipment





The above piece of work, 22 3/16"x 9 1/2" with 4 holes and 2 sides punched and nibbled including setup was produced in only 6.10 minutes and subsequent pieces in only **1.2 min.**

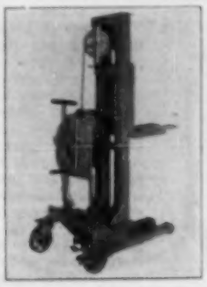
An **electric refrigerator** part, 19 3/16"x 8 1/2" with 10 holes and 4 notches was fabricated including setup in only 5.61 minutes and subsequent pieces in only . . . . . **37 sec.**

Above **electronic chassis**, 12 1/2"x 11 1/2", with 110 holes and 4 notches was completed including setup in only 32.45 minutes and subsequent pieces in only **6.44 min.**

▼ BREVITY—Identify by IEN - 12357 if you write the maker ▼

ELEVATOR . . Portable fork unit to lift and stack pallet mounted loads

Source: BARRETT-CRAVENS CO.
4609 S. Western Blvd., Chicago 9, Ill.



Four ratings from 2 to 2½ ton are available in this new portable elevator. It is equipped with forks to handle single-face pallets for stacking such materials as strip steel and tin plate. Overall height of the assembly illustrated is 78 in. and lift is between 3½ in. above the floor to 50 in., sufficient for double-decking the pallet mounted loads. Assemblies for higher lift as in triple-decking can be specified with hinged uprights that will turn down to clear a doorway.

A geared housing on the hand-operated design shown in the illustration provides for crank connection to obtain either of two speeds. The housing also encloses a governor to limit speed. The power-driven design is equipped with a solenoid brake, thermal overload switch, top and bottom limit stops and a 25-ft. connection cable. Both designs are equipped with safety devices. The steering handle is chain-connected to one of the two casters at the rear. This caster is fitted with a band brake.

▼ BREVITY—Identify by IEN - 12358 if you write the maker ▼

CONVEYING . . Chain elevator bucket integral with one chain link, 5 sizes

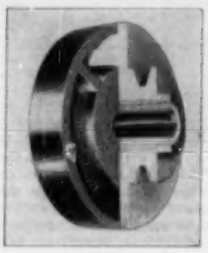
Source: BEAUMONT BIRCH CO.
1503-7 Race St., Philadelphia 2, Pa.

Uni-Cast trade names new chain-elevator bucket made with one chain link of the company's heat-treated alloy steel known as Beaucalloy. Five sizes range from 8 by 5 in. to 16 by 8 inches. Other sizes can be specified for manufacture on special order. Front edge and corners are reinforced. The bottom is flat to prevent arching. Raised surfaces and projecting heads are eliminated.

▼ BREVITY—Identify by IEN - 12359 if you write the maker ▼

DRIVE . . Shock absorber coupling for torsional loads rating to ¾ hp.

Source: CROWN MFG. CO.
1023-27 N. 6th St., St. Louis 1, Mo.



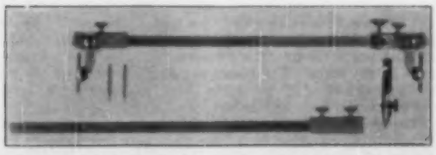
Two segments, one working within the other and cushioned by a compression spring, make up this new shock-absorber coupling. One segment is secured to a motor shaft. The other carries a sheave or pulley or sprocket for connection by belt or chain to a driven machine. Sudden motor starts, as in across-the-line circuit closing, are cushioned by the spring to protect both load and motor. The drive is non-reversing but can be specified for cushioning action in either direction.

Overall diameter is 5½ in. with overall width including a V-belt sheave at 2½ inches. Weight is 2¾ pounds.

▼ BREVITY—Identify by IEN - 12360 if you write the maker ▼

DRAFTING . . Beam compass for radii to 6 feet with extensions

Source: Y & E MFG. CO.
P. O. Box 950-M, Pasadena 20, Calif.



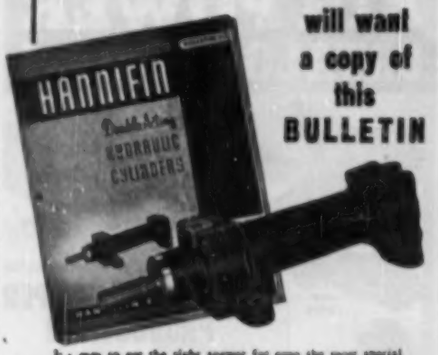
The beam in this new compass is made of aluminum alloy measuring ¼ in. in square cross section and in lengths for 8¼ or 12 in. radii. A rack slides on the beam for 4 in. of adjustment. Extension units or bar stock made of aluminum, brass, steel can be supplied for radii to 6 feet.

Sliding legs ride free on the beam, are clamped in final position. Both legs take pencil leads, center points or needle points or the company's pen attachment. The legs extend 1 in. below the beam to provide clearance.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12361 if you write the maker ▼

EVERY ENGINEER will want a copy of this BULLETIN



It's easy to get the right answer for even the most special jobs when you use Hannifin's new hand-book on HYDRAULIC CYLINDERS. 52 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 13 standard bore diameters, 1" to 8" . . . any length of stroke you specify . . . 11 standard mounting styles . . . standard, double end or heavy duty (2:1) piston rods . . . available with adjustable cushions . . . pressures to 1500 lbs. per sq. in. Special types to order. Write for Bulletin 110.

HANNIFIN CORPORATION
1107 S. Kilbourn Ave., Chicago 24, Ill.

▼ BREVITY—Identify by IEN - 12362 if you write the maker ▼

if you have a problem of misalignment

This new book will be a big help. It contains complete details on the entire Baldwin-Rex line of flexible couplings—Tru-Flex, Semi-Flex, Twin-Flex, Compound and Floating Shaft types. It gives you the facts on why Baldwin-Rex Couplings are truly flexible, are shock absorbing without backlash and are easy to install. The book includes all specifications, prices and horsepower tables.

Just use the coupon to send for your free copy today.

Baldwin-Duckworth Division of Chain Belt Company
358 Plainfield Street
Springfield 2, Mass. S1-408
Please send me Flexible Coupling Bulletin.
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Company.....Dept.....
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City.....State.....

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DESIGNERS & MANUFACTURERS
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BREVITY—Identify by IEN-12364 if you write the maker

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Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient economical maintenance.

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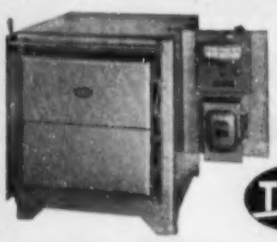

USE TEMCO

HEAT-TREAT FURNACES
TO SAVE TIME AND MONEY

Choose from eight sizes up to 8½ x 7½ x 18 inches interior, with either manually adjusting or fully automatic electronic control. You'll find TEMCO furnaces are low in cost, easy to install, economical to operate and mighty convenient.

1700 Series, illustrated above, in sizes, prices as follows:

Model	Chamber W"H"D"	Furnace Only	With Tomcomotor Controller*	With Electronic Controller*
1730	9½ x 9½ x 13½	$235.00	$297.50	$460.00
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*Wired Control Panel Illustrated, $35.00 additional

Write today for copy of illustrated Data File.

THERMO ELECTRIC MANUFACTURING CO.
482 West Locust St., Dubuque, Iowa.

BREVITY—Identify by IEN-12367 if you write the maker

CLEANING . . Steam spray machine delivers hot solvent, is oil fired

Source: STEROD MFG. CO.
442-46 Frelinghuysen Ave., Newark 5, N. J.

A burner that will operate on any fuel from kerosene to crankcase drainings supplies the heat, following push-button controlled spark ignition, to attain operating temperature in 90 sec. in this new General portable machine. Steam from the heating coil is fed to a metered supply of cleaning solution and the resulting hot spray fluid is directed on the work by a hand gun. Dry powder cleaning compound introduced into the fluid-supply tank requires no mixing as this is handled automatically by the machine.

Capacities are 100 and 200 gal. in the portable design and in a companion stationary model. The gun is a balanced swivel unit and carries the operating control. It can be held shut off without danger to the operator or the equipment. Drive is provided by a ½ or ¾-hp. motor with factory lubricated and sealed ball bearings. Various attachments are available.

BREVITY—Identify by IEN-12368 if you write the maker

VALVE PART . . Ball bearing washer for valves, faucets, ¼ to 1 in.

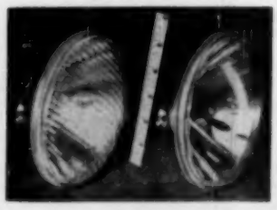
Source: ECONOMY VALVE CO.
5917-21 Tireman Ave., Detroit 4, Mich.

New assembly of washer and ball-bearing housing includes threaded stud that screws in place of the screw normally holding a faucet washer in place. The ball bearing then eliminates twist and seat friction in closing. Complete faucets and valves including the ball-bearing unit also are available from the company in a range of designs.

BREVITY—Identify by IEN-12369 if you write the maker

LIGHTING . . Headlight lamps for mine locomotives, 32 and 115 volts

Source: GENERAL ELECTRIC CO.
1 Nela Park, Cleveland 12, Ohio



Face diameter is 5¾ in. in both of these new mine-locomotive lamps. One, to operate on 32 volts, produces a 100,000 candlepower beam with a 12-deg. spread horizontally and vertically. It is primarily for haulage ways that measure 12 ft. in width and 6 ft. in height. The other, for 115 volts, applies in headlights equipped with resistors for this voltage only. Its 17,000-candlepower beam has a vertical spread of 16 deg. and horizontal spread of 33 degrees. Rated life of the two units is 800 and 1,000 hours respectively. List prices are $2.90 and $3.60.

BREVITY—Identify by IEN-12370 if you write the maker

REFRIGERATING . . Electronic control governs ice accumulation on a coil

Source: LUMENITE ELECTRONIC CO.
405-9 S. Dearborn St., Chicago 5, Ill.

Ask for bulletin "Ice Control"

Model FL is a new assembly of electrodes, connecting leads and an electronically-actuated relay to shut down a refrigerant compressor serving a coil in a cold-water tank when ice accumulation has reached a predetermined thickness on one of the pipes in the coil. The control acts to maintain temperature in the water at a constant point, prevents excess ice build-up or loss of all ice on the coil. It is suited particularly for use with a standard ice-builder milk cooler.

The electrodes are carried in a mounting bracket to attach to one of the coil pipes so the electrode ends face the pipe for 1¼ to 1½ in. clearance. When the ice builds to 1½ in. the compressor is shut down as contact is made and the circuit is actuated by the difference in electronic resistance between ice and water.

When the ice melts to 1¼ in. and both contacts are released the compressor is restarted. The electrodes can be specified for given thickness range. They are sealed in neoprene in a continuous jacket reaching over 10 ft. of lead length of connection cable. List price for compressor control is $80. Standard operation is on 110 or 220-volt 50/60 cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-12371 if you write the maker

ERASE faster, easier electrically!

Bruning's exclusive 7" eraser . . . won't "fly out"

No other machine or method erases as quickly, easily and cleanly as the Bruning Electric Erasing Machine.

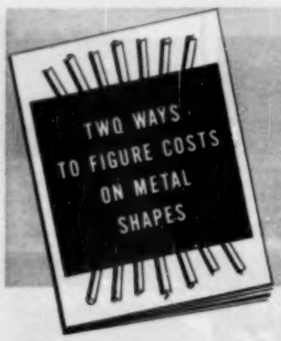
The 7" eraser (exclusively Bruning's) prevents those eraser "fly outs" which let ordinary machines damage your drawings so often.

Your Bruning machine is "lifetime oiled", runs continuously for an indefinite period without heating. It is quiet and you hold it comfortably like a pencil, permitting full view of your work for erasing accuracy. You operate it with convenient finger-tip control.

FREE FOLDER gives details on exclusive erasing advantages. For your copy write today to Charles Bruning Company, Inc., Dept. M-12, 100 Reade Street, New York, New York.

BRUNING ERASERS

BREVITY—Identify by IEN-12372 if you write the maker



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Extrude? Or *roll-form?* From us, you'll get an *unbiased* answer on custom shapes.

We have high-production equipment for *both* extrusion and roll-forming of light metal shapes in various workable metals, in various alloys and finishes. Special contours, holes, slots, etc. Delivered in strips, coils or cut to exact lengths.

Get the lowest possible cost on your light metal shapes. Write for Bulletin IB-10.

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Manufacturers of Metal Extrusions and Rolled Shapes

BREVITY—Identify by IEN-12373 if you write the maker

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and
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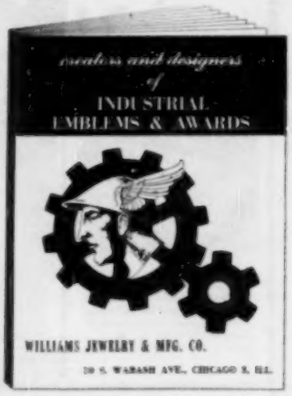


1933 SERIES . . .

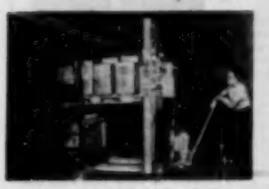
1¼" diameter, heavily gold plated. Jewelers hard fired green and white enamel; heavy pin and safety lock catch.

$9.00 doz. (plus Fed. tax)

WILLIAMS JEWELRY & MFG. CO.
Silversmiths Bldg., Phone Central 6-5818
10 S. Wabash Ave. Chicago 3, Ill.

BREVITY—Identify by IEN - 12374 if you write the maker

Stack farther into aisles
GAIN MORE STORAGE AREA by Palletizing with a--
MOTO-TRUC
TURNS IN SMALLER RADIUS



Moto-Trucs are the shortest trucks of their type, due to most compact power unit, and their controls in easy grip roller type handle, reduce operator fatigue.
Patented articulating hinged spring unit holds drive wheel down on floor for better traction.
Powered by 12-volt motors for level operation and 18-volt for lamp operation.
WRITE FOR BULLETIN NO. 50, and Specifications.

MotoTruc Motorized, Battery Operated Telescopic Hi-Lift Trucks have added thousands of square feet to storage area at Thompson Products Co., Cleveland, and saved labor.

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Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

HI-LIFT TRUCKS • PALLET TRUCKS • PLATFORM TRUCKS

BREVITY—Identify by IEN - 12375 if you write the maker

THIS SQUIRT LOOSENS-
FROZEN BOLTS...BEARINGS

It's fast and accurate—shoots 15 feet—a drop or a squirt. It's labeled Kroil—so you can grab it quickly when a frozen bolt, screw or bearing starts to cost expensive time or threaten production.

That is when Kroil creeps into millionth inch spaces to soften rust, dissolve gum and supply lubrication to loosen the parts. It's fast and it's positive.

"Kano Kroil always opens up the tight fitting covers on fire extinguishers for us. It is truly a wonderful preparation. We have found such covers we could not force off with a blow of a hammer. Several minutes' seepage of Kroil did the trick," so says a service organization for fire extinguishers.

Kroilers are priced at $1.50 each and are well worth it. As an inducement to try Kroil we offer the combination of one Kroiler and one gallon of Kroil—(listed at $3.50) for $4.75, f. o. b. factory.

If you are not one of the 8,500 industrial plants already using Kroil, send for a gallon on the proposition that it will loosen the most stubborn frozen part or you get your money back.

KANO LABORATORIES 1071 Thompson Lane Nashville 11, Tenn.

BREVITY—Identify by IEN - 12376 if you write the maker

Look...NO STACKS!
P-D "Short Stacks" Become an Integral Part of This Michigan Power Plant

DESIGNED BY BURNS & ROE, INC., N.Y.

Here's modern industrial architecture at its best . . . a power plant with no protruding stacks.

This municipal power plant, close to the business district of Lansing, Michigan, was architecturally designed to give the appearance of a commercial building. Elimination of unsightly chimneys was accomplished by the use of specially designed P-D Fan Stacks, recessed into the actual building structure.

P-D Fan Stacks are a complete draft producing unit consisting of fan, breaching and stack, integrated to produce the highest efficiency attainable.

Project and Sales Engineers: THE THERMIX CORP GREENWICH, CONN.
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PRAT-DANIEL CORPORATION
78-12 WATER STREET EAST PORT CHESTER, CONN.
Designers and Manufacturers of Power Plant Equipment for Over 35 Years

BREVITY—Identify by IEN - 12377 if you write the maker

HANDLING . . Steel tote box stacks when filled and nests in storage

Source: UNITED CARRIERS & FABRICATORS INC.
2205-9 Madison Road, Cincinnati 8, Ohio

Twin Hopper Nestler is a new design of tote box made of 18-gage steel in spot-welded assembly and equipped with ¼-in. steel pivoted bales. These bales can be positioned as shown in the illustration for stacking arrangement to provide quick access on two sides to parts contained in the boxes. They can be rotated outward so the boxes will nest closely together as in empty storage. Fifty-five boxes will make a 5-ft. stack.

Work can be unloaded from both bin-type sides, or it can be loaded at one and unloaded at the other. Dimensions are 17½ by 9¼ by 5½ inches. Finish is olive green.

BREVITY—Identify by IEN - 12378 if you write the maker

STORING . . Transparent trays and metal cabinet to hold small parts

Source: AKRO-MILS INC.
P. O. Box 989-A, Akron 9, Ohio

Plastic trays or drawers, each with two removable dividers, assemble in units of four to 64 in metal cabinets to make up this new line of small-parts cabinet storage equipment. Tray dimensions are 2¾ by 5¾ by 1¼ inches. The 32-unit assembly measures 12¾ by 6 by 15¼ inches. List price is about $12. Designation is Model J-32. The trays ride on metal glides. Assemblies can be installed in multiple.

BREVITY—Identify by IEN - 12379 if you write the maker

MARKING . . Self-adhesive stencils for utility marking, decorative finish

Source: GLEICHER MFG. CORP.
139-43 Frelinghuysen Ave., Newark 5, N. J.

New line of self-adhesive masks and stencils are available in quantity for marking and decorative applications. Each is to specification, the company designing the pattern, making the dies and producing the stencils or masks in specified quantity. Need to cut stencils by hand on the job is eliminated.

Any size, shape and pattern can be supplied in required quantity to separate colors in brush or spray painting, to protect surfaces being sand blasted in given areas, to prevent scratching finished surfaces and to mark any design. The individual stencils are mounted on removable interliners that can be taken off just prior to use. Each strips clean.

BREVITY—Identify by IEN - 12380 if you write the maker

RECORDING . . Multi-channel assembly for temperature readings at 16 points

Source: G. M. MFG. CO.
48 W. 3rd St., New York 12, N. Y.

Sixteen circuits connect between temperature-sensitive elements and balancing bridges in the housing of this new temperature recorder. Each circuit is equipped with a 10-contact range-selector switch and connects through the switch to position a print wheel, one circuit after another to make an essentially simultaneous record at desired intervals on the motor-driven strip chart. Elements can be located as required to 500 ft. from the instrument.

Typical applications are in process operations, air conditioning over considerable areas, temperatures of liquids in multiple storage, temperature in the bearings and sumps of a machine, in plastic and rubber molding and curing machines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

BREVITY—Identify by IEN - 12381 if you write the maker

AIR RAID
Zoom down on Dirt, Dust, and Grit with a CLEMENTS-CADILLAC blower-suction cleaner, and you've got the enemy on the run. Use this powerful air weapon to rout the trouble makers from every crack and crevice of your machinery and equipment. Deal 'em a hard blow—regularly.

SAVE TIME · MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .
CLEMENTS CADILLAC
Made in 5 models with attachments for every cleaning job.
PORTABLE COMBINATION BLOWER SUCTION CLEANER
CLEMENTS MFG. CO.
6650 S. NARRAGANSETT AVE. CHICAGO 38, ILL.
ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 12382 if you write the maker

NOW IS THE TIME TO SAVE TIME

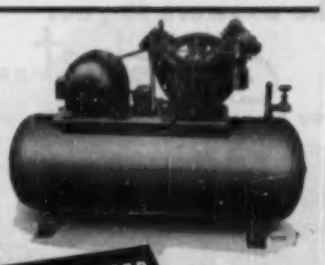
USE Starrett PRECISION GROUND DIE AND FLAT STOCK

Starrett Precision Ground Flat Stock is ideal for test tools; die, jig, fixture and machine parts; templates; shims; gages; punch dies, etc. Made from high grade annealed tool steel cut lengthwise from the sheet and ground to within .001" in thickness. 18-inch lengths, widths from 1/2 to 6 inches, thicknesses from 1/64" to 1" and more. Each piece individually wrapped and marked with size, type and heat treating instructions. Write for New Ground Flat Stock Folder and New Chart "N" giving Formulas for both Oil and Water Hardening.

Starrett
Standard of Precision
BUY THROUGH YOUR DISTRIBUTOR
THE L. S. STARRETT CO. ATHOL, MASSACHUSETTS U.S.A.

BREVITY—Identify by IEN - 12383 if you write the maker

TYPE 30 AIR COMPRESSORS



ALL THE AIR YOU NEED all the time

You can count on day-after-day reliability with Ingersoll-Rand Type 30's on the job. Their rugged construction gives them strength and rigidity for heavy service—continuous or intermittent. Stainless steel valves, automatic overload protection, enclosed centrifugal unloader and other outstanding features assure a long, trouble-free life. Call our nearest branch or write us direct for full information.

A wide range of sizes—tank and baseplate mounted or bare units. ½ to 15 h.p., single and two-stage.

Ingersoll-Rand
514-3 11 Broadway, New York 4, N. Y.

▼ BREVITY—Identify by IEN - 12384 if you write the maker ▼

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DICO CORPORATION
402 S. W. 16 ST., DES MOINES 5, IOWA

▼ BREVITY—Identify by IEN - 12385 if you write the maker ▼

YOU CAN SEE WHAT'S HAPPENING!

when you use the

EAGLE FLEXOPULSE
REPEAT CYCLE TIMER

There is a large, easy-to-read 6 in. dial which has individual adjustments for setting "ON" and "OFF" time—no gears to change. A progress pointer to tell you what's happening at all times.

Wide selection of dials: 60 sec. 120 sec. 5 min. 20 min. 60 min. 120 min. and 5 hours.

The FLEXOPULSE is adjustable over a wide range. There's no guess-work in determining what time cycle you'll require.

We'd like to tell you more. Write for Bulletin 265

AN EAGLE TIMER FOR EVERY TIMING PROBLEM!

EAGLE SIGNAL CORPORATION Bloomington, Illinois
EXPORT DEPARTMENT 11 EAST 40th ST., NEW YORK 16, N. Y.

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the answers to your Gasket PROBLEMS may be found in this FREE Sample Folder!

Use it to stimulate COST-CUTTING, PRODUCT-IMPROVING Ideas!

You'll be surprised at the variety of materials FEL-PRO utilizes to engineer gaskets to your specific needs! In this free Material Sample Folder you may find just the thing you need to solve a present gasketing problem. If the answer is not in the Sample Folder, FEL-PRO Engineers will be glad to put their complete resources and 30 years of gasketing experience at your disposal. Take advantage of this offer without cost or obligation, by writing for your Free Material Sample Folder.

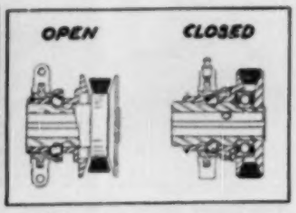
FELT PRODUCTS MFG. CO., 1643 Carroll Ave., Chicago 7, Ill.

FEL-PRO ENGINEERED gaskets

▼ BREVITY—Identify by IEN - 12387 if you write the maker ▼

DRIVE . . Friction clutch grips, releases V-belt by lever action

Source: V-BELT CLUTCH CO.
416-28 N. Western Ave., Los Angeles 4, Calif.



New design of the shifting mechanism on the company's Ball-Lok V-belt clutch, previously described IEN-1690-49, employs a sleeve terminating in a hardened steel ball. The sleeve slides over the original clutch assembly, connects to the shifting ring and positions the end ball to engage a suitable shifting grip with a lever for hand operation or for connection to a pneumatic, hydraulic or electric operator.

The clutch is available in ratings from 2 to 15 horsepower. Operation has not been changed. Retraction of one of the two sides of the V-belt sheave releases the drive and advances and locks it in driving position.

▼ BREVITY—Identify by IEN - 12388 if you write the maker ▼

ROCK DRILLING . . Carbide tipped drill with spiral leads for use in masonry

Source: NEW ENGLAND CARBIDE TOOL CO.
58-62 Brookline St., Cambridge 39, Mass.

Three lengths for deep holes

Lengths measuring 20, 28 and 36 in. have been added to the Cyclo-Twist line of carbide-tipped masonry drills to supplement the much shorter units previously described IEN-5337-50. Sizes range from ⅝ to 1 in. in the 20-in. length and list at $5.60 to $14. The same range is covered in the 28-in. length with list price at $6.70 to $15.50. The 36-in. units start at ½ in. and expend to 1 in. They list at $8.95 to $16.50.

Each drill carries two integral spiral leads on its shank starting at the carbide-tipped point. These leads assist in clearing the dust as the drill is revolved by a machine spindle or suitable portable tool.

▼ BREVITY—Identify by IEN - 12389 if you write the maker ▼

PROTECTING . . Air fed hood for use in toxic dusts and fumes

Source: CHICAGO EYE SHIELD CO.
2326 Warren Blvd., Chicago 12, Ill.

No. 600 is a new window-equipped air-fed hood made of light-weight rubberized fabric to cover a worker's head, shoulders, chest and back. The fabric is water proof and acid resistant. The abrasion-resistant plastic window is mounted in sponge rubber. The hood positions on a plastic headband that is adjustable and equipped with a friction swivel so the worker can move his head.

Air feeds in through tubes to the two sides. Then it is diffused and filtered through cloth bags. A soft cotton bib acts as a baffle to keep out dust. It zips out for cleaning. The hood is approved by the U. S. Bureau of Mines under Class-C Respirator.

▼ BREVITY—Identify by IEN - 12390 if you write the maker ▼

TRUCK . . Power lift platform unit with hinged platform to ride elevator

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 14, Ohio

New assembly of one of the company's 2-ton power-lift platform trucks is fitted with a hinged platform to permit transfer by elevator from one floor to another in cases where the elevator is not sufficiently large to take the platform extended. The truck weighs 3,670 lb., measures 38 in. in width by 109 in. in extended length. This length is decreased to 84 in. when the platform is raised. Head-frame height is 83 inches. The platform rides at 7 in. above the floor in lowered position and rises to 59 inches.

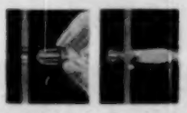
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12391 if you write the maker ▼

Have you a similar use for this 1-piece fastener?

It's a Shelf Support...For ranges or refrigerators—in plastic and metal. Leading appliance makers have achieved substantial installation savings through it.

It's a Cabinet Door Strike...Simple to install; eliminates welding and cuts assembly cost. Any head can be designed without affecting fastening principle.



It's a Blind Rivet...Or a removable fastener. It locks and unlocks with a 90° clockwise rotation. No mating parts such as nuts or receptacles.

It's a Lifter Knob or Dashboard Plug...Plastic Spring-Lock heads are molded around steel inserts, giving strength at point of load or impact. Any shape head can be molded in any color.

What's Your Application?

...Tell us how you can use Spring-Lock Fasteners in your products. We'll be glad to work out the details with you.

Send for more data and *Free Samples* today.

Simmons Fasteners

QUICK-LOCK • SPRING-LOCK
ROTO-LOCK

SIMMONS FASTENER CORP., 1758 North Broadway, Albany 1, N. Y.

▼ BREVITY—Identify by IEN - 12392 if you write the maker ▼

LEAKPROOF!

Barco Swivel Joints for Hydraulic Machinery

Cylinders, die heads, rolls, platens—there's a Barco Swivel Joint for each and every kind. For pressures up to 2500 pounds, on injection molding presses or on platen presses for laminating plastic sheets, specify Barco Swivel Joints in the extra heavy pattern with steel balls. The 360 degree swivel movement with side flex takes care of piping misalignment.

Specify Barco Revolving Joints to supply steam, gas or other fluids from a fixed supply pipe to a rotating drum or member without leakage. For more information or catalogue write Barco Manufacturing Co., 1838 M Winnemac Ave., Chicago 40, Ill.

BARCO MFG. CO.

In Canada: THE HOLDEN CO., LTD. Montreal Canada

▼ BREVITY—Identify by IEN - 12393 if you write the maker ▼

A SINGLE UNIT DOES 2 BIG JOBS

ConoAIRPAK

1. REGULATES
2. FILTERS

• PNEUMATIC GAUGES
• SPRAYING EQUIPMENT
• LABORATORY EQUIPMENT
• INSTRUMENTS & CONTROLS
• PRODUCTION EQUIPMENT

Here's a "small package" replacement for bulky, hard to mount airsets . . . providing precise REGULATION in ranges 0-30, 0-60, 0-125, psi, for inlet pressures up to 150 psi . . . with ability to filter out particles down to 40 microns! Investigate ConoAirpak for all installations requiring more efficiency . . . less space, installation time, maintenance and initial cost. Forged brass and stainless steel construction for corrosion resistance—simplified mounting—large capacity reducing valve with safety relief. Available in a variety of ranges, filter areas, and drip-well capacities.

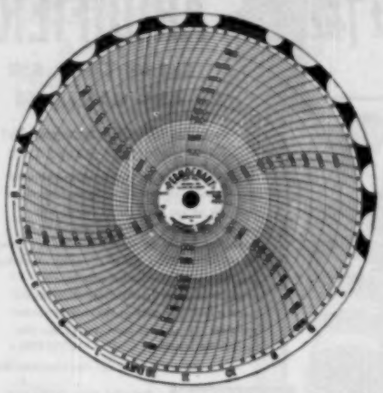
WRITE TODAY FOR BULLETIN FR-15

ConoControls

CONOFLOW CORPORATION
Fort Wash. Pa. 2, Pa.

▼ BREVITY—Identify by IEN - 12394 if you write the maker ▼

LONG-LIFE PLASTIC CHARTS



Reusable—PERMOCHART*—Washable

You can use WASHABLE, laminated plastic "PERMOCHARTS"* on all your circular recording and controlling instruments. Convenient to use, they'll save you time and expense.
• Guaranteed serviceable life—TWO YEARS. • Cost per day only $ .00086 to $ .00342. • Available for any instrument using circular charts. • Made of 100% "Vinylite" plastic laminated construction.

Send for sample of PERMOCHART construction

* Reg.

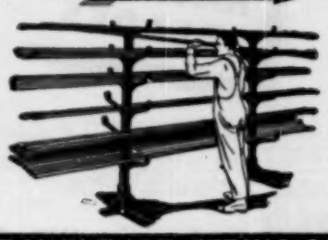
ALLEGHENY PLASTICS, INC.
390 CHESTNUT ROAD SEWICKLEY, PA.

▼ BREVITY—Identify by IEN - 12395 if you write the maker ▼

SPEEDS UP STOCK-ROOM SERVICE

The BROWN TIME-SAVING RACK saves the time previously lost end-hauling each bar of stock its entire length from the old-style, closed-side Rack, the Brown Rack requiring but a few inches of side movement. Each length, width and thickness of stock is displayed in goldfish visibility for instant selection. Workmen waiting for stock are served without waste of time, and returned to their production machines to turn out a maximum of output. Any time you require additional storage space, all you need do is to add more units. If you want to relocate it at any time, you can do so for it is unattached to the building. It is a simple, durable article made of metal in five styles. It can't burn, warp, sag or twist; depreciation is practically nil. SEND FOR BULLETIN No. 26-E DESCRIBING

BROWN'S *QUICK-SERVE* RACKS



BROWN ENGINEERING CO.
122 NORTH THIRD STREET READING, PENNA.

▼ BREVITY—Identify by IEN - 12396 if you write the maker ▼

BECKETT AIR POWER DRILL PRESS FEED

Taps Extruded Holes in 16 Gauge Steel with Multiple Drill Head!

NO LEAD SCREW!
NO TAPPING HEAD!
NO CLUTCHES!
NO CHECKING DEVICES!

JOB DATA FORM: Metal Industries, Inc. Youngstown, Ohio

JOB: Tap two extruded holes in 16 gauge, C.R. Steel refrigerator bracket with 10/32" tap.

EQUIPMENT: Small drill press equipped with multiple drill head and BECKETT AIR POWERED DRILL PRESS FEED AND TAPPING CONTROL.

PRODUCTION: 1100 pieces (2200 holes) tapped per hour. Class 2 thread. No tap breakage!

Beckett Air Powered Tapping Feed uses only sufficient air pressure to move the tap to the work. There is no forcing of the tap—tap is its own lead. After tap is through the work, motor *instantly* reverses and tap leads itself out, *without stripping the last thread!* Tapping depth controlled to 0.001". Tap at the same r.p.m. used for drilling the material.

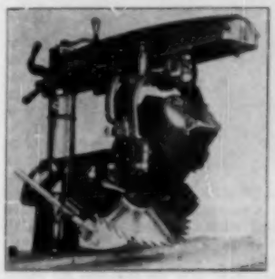
Many manufacturers are now using BECKETT AIR POWERED FEEDS on tapping jobs formerly done on expensive tapping machines—with far *more* and *better*, production at *great savings!* Get full details today. Write for Bulletin No. 20.

BECKETT-HARCUM CO., 1144 Wayne Rd., Wilmington, Ohio

▼ BREVITY—Identify by IEN - 12397 if you write the maker ▼

WOOD WORKING . . Radial machine for sawing, shaping, routing, dadoing

Source: DE WALT INC.
63 Fountain Ave., Lancaster, Pa.



New motor design in the Model-GR radial-arm machine is announced by the company to provide a maximum of clearance between table and motor. A 14-in. blade mounted on the motor spindle will cut square through 4½ inches. The motor is totally enclosed design with factory-lubricated and sealed ball bearings that require no attention in service. Motor rating is 2-hp. universal or single-phase ac. for a 12-in. blade, 3-hp. single-phase or polyphase ac., or 5-hp. polyphase ac. for a 14-in. blade.

The motor is secured beneath a head that rides in the radial arm on double-row factory lubricated and sealed ball bearings in track rollers. The head and its aluminum yoke permit positioning the motor universally. Latches engage the positions most used. Locks provide for securing in any position. Two arm lengths are 28⅝ and 87 inches. They provide maximum crosscut capacity at 16 or 24 in. based on 1-in. in cut depth. The machine table is steel channel construction on detachable legs and includes a stationary wood top. Dimensions are about 28 by 44 inches.

▼ BREVITY—Identify by IEN - 12398 if you write the maker ▼

DRIVE . . Electrical differential for stepless reversible speed change

Source: SPEED CONTROL CORP.
1448-52 E. 289th St., Dept. C-1, Wickliffe, Ohio

Speeon No. 00ED is a new ½-hp. assembly of the company's variable-speed drive previously described IEN-10565-49. It rates the ½-hp. in non-reversing design which is available in various ranges for speed between 0 and 250 to 1,000 rpm. maximum. A companion reversing drive provides for maximum speed between 150 and 600 rpm. on both sides of zero. This assembly rates ⅓ hp. and in all units speed variation is stepless.

Input is at a ⅔-hp. ac. motor mounted on the top of a differential gearing that has three input shafts on the left hand side and one output shaft on the right. The ac. motor is a 220/440-volt 3-phase 60-cycle squirrel-cage constant-speed unit. It connects by belt to the central one of the three input shafts in the differential. Identical ½-hp. dc. motors are direct connected to the other two shafts to provide the means for speed adjustment and directional control.

Electrical interconnection between the two dc. motors can be adjusted so either one operates at varying speed as a generator to deliver current to drive the other at varying speed as a motor. This variation is delivered through the differential to the output shaft to obtain the desired speed and direction of rotation in the equipment.

▼ BREVITY—Identify by IEN - 12399 if you write the maker ▼

TRUCK . . Four wheel trailer rides in tractor train, also stacks

Source: EQUIPMENT MFG. CO.
21548-52 Hoover Road, Detroit 5, Mich.

Dolly Rack is a new four-wheel platform truck equipped with a 1-in. oak floor and steel frame mounted on 6-in. forged-steel caster wheels, two rigid and two swivel. At the corners are posts with top and bottom fittings to hold one truck above another in secure stacked arrangement. Also at the corners are spring-loaded tow hitches staggered in height to take criss-cross tow bars that hitch trucks together in a train.

Load capacity is 1½ ton. Overall dimensions are 41 by 72 in. in width and length. Clearance above the floor is 7 inches. The posts stand 28 in. above the platform top. Overall corner-post length is 33 inches. Side and end bars, made of wood or steel, are available with hooks that fit in slots in the posts to lie horizontally around the platform as load retainers.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12400 if you write the maker ▼

There's always room for a ROTO-CLONE

Modern Dust Control Equipment Designed to Fit the Space and the Job

• This two wheel grinding stand, although placed in a crowded center-of-plant location, is serviced by a wall mounted Type D Roto-Clone. Dust-laden air is removed at the hoods, conveyed to the Roto-Clone where the dust is separated and delivered into the hopper and the air is passed through a final aftercleaner and recirculated to the workroom. A complete, compact operation utilizing unused wall space and designed for disposal of collected dust at floor level. Bulletin 270-A describes this as well as the complete line of Roto-Clone Dust Control Equipment. Write for it today.

AMERICAN AIR FILTER CO., INC.
355 Central Ave., Louisville 8, Ky.

AAF

In Canada: *Darling Bros., Ltd., Montreal, P. Q.*

ROTO-CLONE DUST CONTROL

▼ BREVITY—Identify by IEN - 12401 if you write the maker ▼

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"From Research to Reality"

▼ BREVITY—Identify by IEN - 12402 if you write the maker ▼

TO INSURE PROMPT DELIVERIES . . .

"STANDARD" RECOMMENDS STANDARDS

You can depend on prompt deliveries of UNBRAKO Products when you use *standard sizes.*

For, despite shortages, stepped-up demand and other problems of the emergency, we've been able to keep full stocks of UNBRAKO "standards" on our dealers' shelves—ready for immediate delivery.

And that's not all . . . Every time you use a *standard* size UNBRAKO it represents a substantial saving over the cost of a "special."

Be sure you have our latest catalog of UNBRAKO *standard* products. Send for your copy of Bulletin 643-R today.

SOCKET UNBRAKO SCREWS

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 16, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 12403 if you write the maker ▼

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: ¾-ounce size, or 2 x 3 x 1"

Your inquiries are invited.

DAYTON ROGERS *Manufacturing Company*

MINNEAPOLIS 7, MINNESOTA

▼ BREVITY—Identify by IEN - 12404 if you write the maker ▼

High Voltage Transformer for Testing Dielectric Strength—as seen in National's Research Laboratories

National's Continuous Research —*the answer to your* Improved Profitable Products

National, not only carries on a continuing quality control program in the manufacture of National Vulcanized Fibre and Phenolite to assure adherence to rigid specifications, but, is constantly seeking improvements in these products for the advancement of industries where plastics practically perform.

It will pay you to see—

NATIONAL VULCANIZED FIBRE — A tough, horn-like material with high dielectric and mechanical strength. Excellent machinability and forming qualities, great resistance to wear and abrasion, long life, light weight. Sheets, Rods, Tubes, Special Shapes.

PHENOLITE Laminated PLASTIC — About one-half the weight of aluminum, possesses an unusual combination of properties—a good electrical insulator, great mechanical strength, high resistance to moisture; ready machinability. Sheets, Rods, Tubes, Special Shapes.

National Research and Engineering Service are available to you, without obligation—to help you solve your specific development problem. Write to—

NATIONAL VULCANIZED FIBRE CO.

WILMINGTON, DELAWARE — Offices in Principal Cities

Since 1873

▼ BREVITY—Identify by IEN - 12405 if you write the maker ▼

REZNOR

the World's Largest Selling Gas Unit Heater

Hung from ceiling or mounted on floor

Here's Automatic Heat!

TURNS ON AND OFF ITSELF

Sleep, play or work, the Reznor adjusts inside temperatures automatically. Installed in offices, stores, factories, churches, lodges, and homes. See your nearby Reznor dealer.

REZNOR MANUFACTURING CO.
19 UNION ST. · MERCER, PENNA.
Send me 20-page catalog in full color

Name _____
Firm _____
Address _____
City _____ Zone ____ State ____

▼ BREVITY—Identify by IEN - 12406 if you write the maker ▼

SHEAR . . Air operated machine for bar stock or equivalent to ⅝ in.

Source: O'NEILL-IRWIN MFG. CO.
318 Eighth Ave. S., Lake City, Minn.

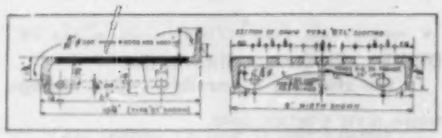
Power Parter is a recent addition to the Di-Acro line of bending and shearing equipment. It is specifically a further development of the hand-operated bar shear previously described IEN-9x50-47 by addition of a 3-in. pneumatic operating cylinder, filter, lubricator, pressure gage, foot-operated valve and housing. The assembly weighs 200 pounds. It occupies 15 by 28 in. of floor space. It operates on connection to a shop air line for 80-lb. pressure.

The cutting head is standard with ten openings for round stock from 1/16 to ⅝ in. in 1/16-in. steps. It can be supplied for square, rectangular, hexagon and shaped stock in equivalent sizes to specification. A three-way adjustable gage is standard. An Ejectomatic gage can be specified.

▼ BREVITY—Identify by IEN - 12407 if you write the maker ▼

FLOORS . . Non-slip stair tread, abrasive impregnated non-ferrous alloy

Source: SAFE TREAD CO.
28-32 Vesey St., New York 7, N. Y.



Hy-Tenso Safe Tread is a new non-ferrous alloy that is impregnated while being cast with aluminum-oxide abrasive to form a stair tread ready for bolted installation. Both solid and drain types are available in two patterns in a range of stock sizes measuring 18 to 36 in. in length by 4 to 10¼ in. in width. Representative applications are in ship ladders, trench covers, tank platforms, box-car runways, equipment steps, running boards, deck plates.

▼ BREVITY—Identify by IEN - 12408 if you write the maker ▼

MOTOR CONTROL . . Rotary action is protected against dust and lint

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

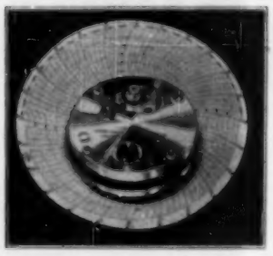
Semi-dust-tight enclosure for this new Loom-Motor starter encloses a rotary-action slam-proof mechanism that operates an over-center toggle for quick make or break. A bi-metal disc-type thermal overload relay protects the motor. The handle can be locked in "on" or "off" position.

The cover can be opened only when the circuit is open. It closes on a neoprene gasket to make the unit suitable for use in dusty and lint-filled locations. Rating is to 7½-hp. for polyphase motors to 600 volts.

▼ BREVITY—Identify by IEN - 12409 if you write the maker ▼

RECORDING . . Eight day clock and chart for use in standard recorder

Source: AMERICAN RECORDING CHART CO.
3111 E. 11th St., Los Angeles 23, Calif.



Macnick is a new spring-driven chart clock that operates for 8 days on one winding and is available with interchangeable converter gears for one turn of the chart spindle in seven steps between 2 and 24 hours. It also is supplied for one turn in 2, 3 or 7 days. The two-part clock housing is sealed with a neoprene gasket against entrance of moisture, dust, gases. The balance wheel is set in jewel bearings. The chart, available with the clock, is made in a variety of designs for given requirements. The clock lists at $10.50. Converter gear units are $3.50 each.

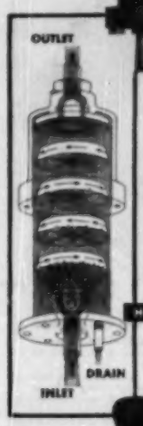
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12410 if you write the maker ▼

Let The ARIDIFIER

CLEAN YOUR AIR AND GAS LINES

Removes 92% Oil, Water and Dirt



The Aridifier gives you positive removal of oil, moisture and other foreign matter from air or gas lines. With paints and lacquers it often eliminates bloom and imperfections in finish. It provides dry lines for ceramics, sand blasting, for air cleaning, etc. Wherever the need exists for dry clean air or gas, the Aridifier delivers the goods. Easily installed. No maintenance problem. 10 models available. Capacity range: As low as 7 CFM to 17,000 CFM.

BULLETIN 147 Tells The Complete Story

HOW IT WORKS — Exploded view shows how four multi blade rotors revolve at high speed in opposite directions under impact of air movement through non-aligned rotor spaces. Moisture, dirt and other foreign matter which collect on rotor blades are thrown out of air stream by centrifugal force to side of housing, and pass into drain.

Made By The Manufacturers of Logan Lathes and Shapers.

Logan ENGINEERING CO.
4902 W. LAWRENCE AVE., CHICAGO 30, ILL.

▼ BREVITY—Identify by IEN - 12411 if you write the maker ▼

WHALE

WHALE BRAND

HY-FLEX

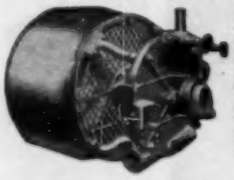
HACK SAW BLADES

Here's the original, time-tested HY-FLEX BLADE . . . of a special analysis molybdenum steel as Forsberg produces it. Scientific heat treatment enables these blades to give practically equal performance with high speed checked for accuracy throughout every step of manufacture and given a tough bending pounds test before you get them for sale. If you want to promise long life on stubborn cutting jobs, offer Forsberg HY-FLEX BLADES and you'll deliver it. Ask for the catalog that describes these and other good FORSBERG Tools.

THE Forsberg MFG. CO.
BRIDGEPORT, CONN.

▼ BREVITY—Identify by IEN - 12412 if you write the maker ▼

WING FORCED DRAFT BLOWERS



THE WING TYPE K IS THE GRAND-DADDY OF ALL TURBINE BLOWERS. It's been a standard since 1903. For forced draft by bricking into boiler wall settings at side, rear or front. Capacities up to 50,000 CFM and statics to 15 in. Mere turn of steam valve, manually or automatically, varies the speed and capacity. Oil-free exhaust steam permits economical utilization in feed water, process and heating systems.

THE WING TYPE R TURBINE DRIVEN BLOWER is easily installed on burner fronts or boiler settings. It provides precise-draft control, manually or automatically, eliminating duct work and large space requirements. Particularly adapted for plants where oil-free exhaust steam is utilized. Negligible operating cost, as most of heat from steam is recovered.

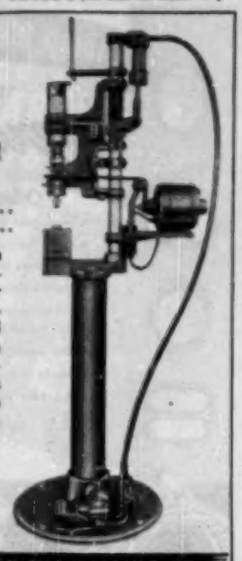
WING EMD MOTOR DRIVEN BLOWER. For oil or gas burners, stokers, pulverized fuel and hand-fired boilers. Vertical or horizontal mountings; on floor or on wind boxes or air heaters. For statics up to 18 in., volumes up to 50,000 CFM. Manual or automatic capacity variation. Falling horsepower characteristics with dampering. Total efficiencies up to 94.7%.

160 VREELAND MILLS ROAD, LINDEN, N. J.

FACTORIES: LINDEN, N. J. AND MONTREAL, CANADA

L. J. Wing Mfg. Co.

▼ BREVITY—Identify by IEN - 12413 if you write the maker ▲▼



AIRFLEX
PNEUMATIC RIVETER
with automatic control

SPEEDS UP PRODUCTION . . .
INCREASES PROFITS . . .

For light riveting on Glass, Plastics, Leather, Wood, etc. . . . or for heavy duty capacity on metal and alloys . . . multiple riveting . . . or whatever your requirements may be, there is an AIRFLEX Pneumatic Riveter to do the job efficiently.

Write or wire today for full details and literature.

Airflex Pneumatic Tools — LEMERT ENGINEERING CO. IN THE HOOSIER STATE SINCE 38
1201 N. Western, Plymouth, Indiana

▼ BREVITY—Identify by IEN - 12414 if you write the maker ▲▼

what do you want to pump?

We frankly don't know all the products that an IBBO can pump, but if you want a better way to transfer fluids like these from one place to another, chances are an IBBO can do the job for you.

The IBBO is a screw-type rotary pump. Its axial flow design permits liquids to be pumped close to the rotating axis of the rotor. This means low liquid velocity through the pump and quiet pulsation-free flow. Capacities range to 1000 gpm at 500 psi and 150 gpm at 1500 psi.

Write for Bulletin 1-102A-Q

DE LAVAL STEAM TURBINE CO., TRENTON 2, N. J.
DE LAVAL

▼ BREVITY—Identify by IEN - 12415 if you write the maker ▲▼

PUSH BUTTON INSULATION RESISTANCE TESTING

with

VIBROTEST

- RANGES TO 50,000 MEGOHMS
- NO CRANKING
- NO LEVELING
- ALL-ELECTRIC
- RUGGED
- FULLY PORTABLE
- ACCURATE

VIBROTEST is built throughout to make insulation resistance testing FAST, EASY and ACCURATE for you. No laborious cranking . . . No mechanical parts to get out of order . . . Only two binding posts for ALL tests. Several Models have A. C. and D. C. volt ranges, as well as low resistance ohmmeter.

This is an instrument that makes insulation resistance testing a "push-button" affair! Ask for more information.

WRITE FOR BULLETIN 2-A

ASSOCIATED RESEARCH, Incorporated
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

▼ BREVITY—Identify by IEN - 12416 if you write the maker ▲▼

DRIVE . . Speed reducer mounts on driven shaft, ¾ to 27 hp.

Source: DODGE MFG. CORP.
500 S. William St., Mishawaka, Ind.

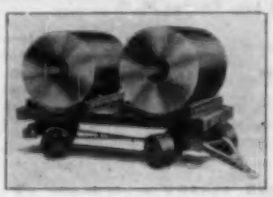
Four new units have been added to the Torque-Arm speed reducer previously described IEN-2330-50. The new assemblies are single-reduction design as compared with the previous double reduction. Output speeds range from 115 to 330 rpm. with power rating to 27 hp. for belt connection to the driving motor and direct mounting on the driven shaft. A torque arm prevents housing rotation. A turnbuckle on the torque arm provides for belt tension adjustment.

Shafts are mounted in ball bearings in the cast-iron housing. Helical steel gears operate in oil. Taper-Lock sheaves are recommended for motor and reducer input shafts. A flat belt drive can be used if required by the application.

▼ BREVITY—Identify by IEN - 12417 if you write the maker ▲▼

TRUCK . . Trailer for steel coils rates 10 ton on roller bearing wheels

Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Pittsburgh 3, Pa.

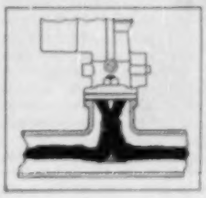


Two coils of 48-in. strip steel are carried in rubber-faced cradles on this new 10-ton trailer. It is mounted on rubber-tired roller-bearing wheels with axles pivoted and connected so a train of the trailers will track back of a power unit. Dimensions overall are 26 by 102 by 24 inches.

▼ BREVITY—Identify by IEN - 12418 if you write the maker ▲▼

ENGINE . . Venturi vaporizer for intake manifold on gasoline engine

Source: LEAKE MFG. CORP.
102-6 Montgomery St., Brooklyn 25, N. Y.



Turbo-Jet Gas Saver trade names new venturi-type device that is suspended below a gasket to apply in the intake manifold under an engine carburetor. The device acts to vaporize any solid drops of gasoline leaving the carburetor so only vapor is fed to the engine cylinders. Designs are available for use in standard trucks, busses and other motor vehicles with gasoline engines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

▼ BREVITY—Identify by IEN - 12419 if you write the maker ▲▼

Lost minutes come to light with SYLVANIA BIRDSEYE Reflector Lamps

Scientifically constructed to control the direction of their light output, Sylvania Birdseye Reflector Lamps help bench- and machine-workers eliminate waste motion and material. *Save minutes and money on many critical seeing tasks.* Made in types and wattages for every need.

For full details about the complete line of Sylvania Birdseye Reflector Lamps, call your Sylvania Lighting Distributor or write Sylvania Electric Products Inc., Dept. L-3012, 1740 Broadway, New York 19, N. Y.

SYLVANIA ELECTRIC

▼ BREVITY—Identify by IEN - 12420 if you write the maker ▲▼

$1907 G-E capacitor investment saves $2700 a year

Completely paid off in eight months—that's the experience the Empire Plow Company of Cleveland, Ohio, had when they installed 240-kvar of General Electric capacitors.

The power factor rose from a money-wasting 61% to better than 97% after the capacitor installation. This improvement in power factor meant real savings in the power bill. The entire installation—capacitors, switches and labor—cost $1907. The savings have been $2700 in the first year alone.

A quick check may show that you can do the same—especially if your power factor is below 85%. Also, capacitors will usually improve voltage conditions, allow for expansion of your electrical load, and relieve feeders and transformers of overload. Call your nearest G-E Sales Office or write for information on how capacitors can help you. *Address Sec. P407-197, Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 12421 if you write the maker ▲▼

Chicago MOUNTED WHEELS

***First and Finest*— and Still the Leader!**

Chicago Mounted Wheels—which were the first to be mounted on steel mandrels—provide a custom-built product to fulfill virtually every kind of grinding and polishing operation. They speed up production — last longer — and cost less . . with a variety of styles and sizes to cover every type of operation.

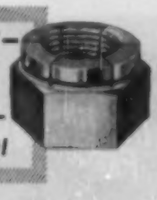
Write for Free Catalog, plus details on Free Engineering Service.

CHICAGO WHEEL & MFG. CO.
Dept. N, 1101 West Monroe Street, Chicago 7, Illinois

▼ BREVITY—Identify by IEN - 12422 if you write the maker ▲▼

A fastener AIN'T, if— it works loose.

The "FLEXLOC" IS— because it won't!



FLEXLOC
ONE-PIECE, ALL-METAL
STOP- and LOCK-NUT

Its "chuck-like," resilient locking segments lock the "FLEXLOC" securely in any position on a threaded member with a controlled, uniform and dependable torque.

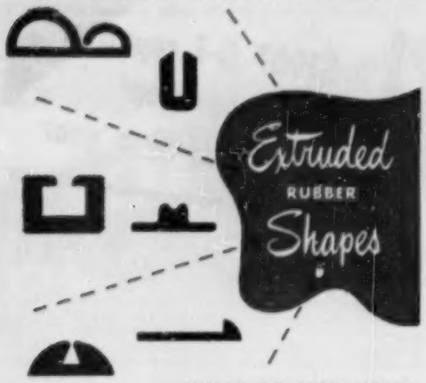
Tough applications demonstrate that the "FLEXLOC" positively "won't work loose", yet it can be removed easily with a wrench when desired. Because it is all-metal, temperatures as high as 550°F. hold no terrors for the "FLEXLOC."

The "FLEXLOC" has plenty of tensile . . . can be re-used many times . . . has therefore a long, effective life.

Write for further information and free samples.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 12423 if you write the maker ▼



WHAT DO YOU NEED?

We have a multitude of dies available to meet your requirements. Designs shown are but a few in our large and varied assortment. Lowest possible cost per unit. Send specifications *today*.

FREE: 44 page catalog

Illustrates and describes complete LAVELLE line machine tool and industrial rubber specialties. Request your copy today.

Take It Up With

LAVELLE Rubber Company

1811 WEST HUBBARD STREET, CHICAGO 22, ILLINOIS

▼ BREVITY—Identify by IEN - 12424 if you write the maker ▼

You'll find these products in SAFE HANDS!

HANDEEZ

a must where hands come in contact with lubricating oils . . . Lifts shop grime from pores, gently but thoroughly. Contains a sterilized vegetable emollient which acts as an absorbent. Non-irritating . . . keeps skin free of cracks where dermatitis starts. In powder form—bulks BIG at low cost.

BORSUDS

A borated, soluble hand cleaner for heavy grime on tender skin. Contains finest medium and low titer soaps (the lower the titer the more quickly soluble the soap). Lathers richly even in fairly hard water, cannot clog drains.

VOLAX

Extra-heavy duty hand cleaner. Removes ground-in grime, printing ink, stubborn dirt. Contains friable volcanic ash.

DISPENSING EQUIPMENT AVAILABLE

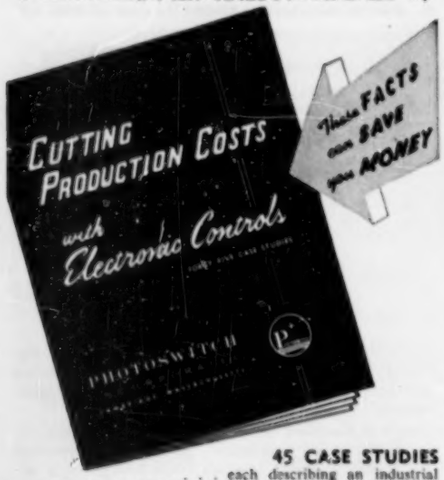
See your DOLGE SERVICE MAN or write for literature.

Dependable

DOLGE

WESTPORT, CONNECTICUT

▼ BREVITY—Identify by IEN - 12425 if you write the maker ▼



45 CASE STUDIES

. . . each describing an industrial control problem which has been solved through the use of electronics. Not a catalog . . . it shows HOW photoelectric and electronic controls count, guard, sort, weigh, measure, maintain liquid levels, program operating cycles and do countless other tasks with unfailing accuracy and amazing speed.

Write for your copy today.

PHOTOSWITCH INCORPORATED

75 Broadway, Cambridge 42, Massachusetts

▼ BREVITY—Identify by IEN - 12426 if you write the maker ▼

TIMING . . Reset interval unit in eleven ranges from 15 sec. to 24 hr.

Source: R. W. CRAMER CO.
49 Saybrook Ave., Centerbrook, Conn.

Type IG is a new automatic-reset interval timer for electrically-operated equipment that is to be turned manually on, run for a predetermined interval and then stopped automatically. Representative applications are on microfilming equipment, dryers, therapeutic machines, extractors, ovens, battery chargers. The timer operates one or two single-pole double-throw switches rated at 10 amp. on 110-volt ac. The unit can handle heater loads to 1,200 watts or inductive loads in which inrush current does not exceed 15 amp. on 110-volt ac. Operation can be specified for 6 to 220 volts.

List price ranges from $11 to $14.50 for 110-volt ac. depending on type and interval. The assembly is supplied without any external housing for built-in application. Face dimensions are about 2¼ by 3 inches. Overall height is about 3¼ inches.

▼ BREVITY—Identify by IEN - 12427 if you write the maker ▼

PROTECTING . . Safety strap made of nylon fabric in six plies

Source: R. H. BUHRKE CO.
4703 W. Grand Ave., Chicago 39, Ill.

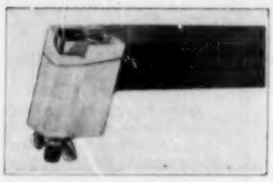
Remains flexible in low temperatures

New nylon strap has been added to the company's lines of safety belts and harnesses. Breaking strength is about 3,000 pounds. Width is 1¾ inches. Abrasion resistance is high and the strap is considered safe until worn through to the two inner plies which are colored red for warning purposes.

▼ BREVITY—Identify by IEN - 12428 if you write the maker ▼

LATHE TOOLS . . Chrome plated holders for round, rectangular, triangular bits

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.



New design in the company's previously developed line of EjectorTool tool-bit holders includes chromium plating that eliminates chip erosion. The plated holders remain serviceable indefinitely. Shank sizes range from ⅝ by ¾ in. to 1 by 1½ in. in section. Length 6 and 8 inches.

Holders for round bits take ⅜ or ½ in. in diameter by 1½ in. in length. Square bits are ⅜ or ½ in. by 1½ inches. Triangular bits measure ¼ or ⅜ in. in face width by 1½ in. in length. The rectangular bits are ⅜ by ¾ by 1½ inches. Detail illustrated data in Catalog 50, Supplement 2, 6 pages.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12429 if you write the maker ▼

Announcing . . .
2 more BLAZECRETE Hydraulic-setting REFRACTORIES

To team up with the highly successful 5X BLAZECRETE Johns-Manville has developed these 2 new refractories designed for lower temperature applications. They, too, can be flipped into place and troweled smooth without ramming or tamping . . . or can be gunned.

1. Standard BLAZECRETE—(2000F to 2400F) For building and repairing old refractory linings. Makes brickwork repair easier, less costly than using "plastics." For use by boiler manufacturers to replace fire clay tile in wall construction. No preheating required.

2. L.W. BLAZECRETE—(2000F) A low conductivity refractory concrete for use in building new linings, repairing old. It's lightweight—adaptable and economical for many applications.

New famous 3X BLAZECRETE—(3000F) For heavy patching, especially where brickwork is spalled or deeply eroded. Also for repairing forge furnace linings, burner blocks and lining ladles in ferrous and non-ferrous foundries.

All Blazecrete products harden after only 6 hours of air curing . . . can then be fired or left standing indefinitely. Write Johns-Manville, Box 290, N. Y. 16, N. Y.

Johns-Manville
BLAZECRETE REFRACTORIES
for patching and gunning

▼ BREVITY—Identify by IEN - 12430 if you write the maker ▼

Clamp Most Anything WITH "Aero-Seal"

WORM-DRIVE CLAMPS

- Hold odd-shaped connections
- Hold multiple pipes or ducts
- Conforms to any shape
- No distortion—no crimping
- Vibration-proof . . . no parts to lose or loosen
- Use again and again
- Made in any length
- All stainless steel bands at no extra cost

ANOTHER BREEZE PRODUCT

WRITE TODAY FOR FREE SAMPLE!

"Aero-Seal" HOSE CLAMPS

AERO-SEAL Worm Drive Never Works Loose

BREEZE CORPORATIONS, INC.
32 South Sixth Street Newark, N. J.

▼ BREVITY—Identify by IEN - 12431 if you write the maker ▼

Send for this Manual of . . .

MEYERCORD DECAL NAMEPLATES

FREE!

Most useful nameplate manual ever offered! 20 full-color pages show hundreds of problem solving uses of Meyercord Decals on glass, metal, wood, china, plastic, rubber, leather—curved, flat or flexible surfaces. Fast, easy application.

WRITE FOR YOUR FREE COPY BUSINESS LETTERHEADS, PLEASE, DEPT. 42-32

The MEYERCORD Co.
World's Largest Decal Manufacturer
5232 W. LAKE ST. CHICAGO 44, ILL.

▼ BREVITY—Identify by IEN - 12432 if you write the maker ▼

Progress
MEANS SAVINGS FOR YOU

Back in 1908, the President of our Company packed his invention (The International Retractable Anvil Staple Machine), in a trailer, and "beat a path" to the doors of potential users. After watching their *filled* cartons being Stapled *from the outside, tops and bottoms simultaneously*, it didn't take them long to interpret the savings that this new miracle machine could effect—in time, labor, space and prestige.

Well, sir, today you'll find International Retractable Anvil Staple Machines being used in virtually every industry in the land. If you haven't looked into them yourself, you're missing a bet—and also losing money!

INTERNATIONAL STAPLE AND MACHINE COMPANY
HAVERTOWN 5, PA.
DISTRIBUTORS IN PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 12433 if you write the maker ▲▼

Know the scope of the MARSH line of pressure gauges

There are literally thousands of combinations of types, ranges, case styles and connections in the broad Marsh line of pressure, vacuum and compound gauges. As a result, gauge requirements that would be "special" to others are often standard to Marsh.

This means that we can meet your gauge needs better and more economically . . . whatever the service condition, quantity or design requirement. To know the scope of Marsh Instruments just ask for the new fact-filled catalog.

MARSH INSTRUMENT CO.
Sales offices of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept.: 183 E. 44th St., New York 17, N. Y.

▼ BREVITY—Identify by IEN - 12434 if you write the maker ▲▼

▼ BREVITY—Identify by IEN - 12435 if you write the maker ▲▼

BETTER STORAGE for SMALL PARTS

★ Less space
★ Less cost
★ Easier to find!

METAL SHELF UNIT SECTION with TRANSPARENT PLASTIC TRAYS

280 COMPARTMENTS IN ONE SECTION

Sturdy steel shelf sections stack vertically, no space lost. Each section can take up to 56 plastic transparent trays, available in two sizes. Each tray has four removable dividers making 5 compartments. Tray fronts have finger-pulls, and slots for index card—always clean and legible. Thousands in use. Send for bulletin 1180.

ANDREW TECHNICAL SERVICE
3005 North Clark, Chicago 13, Ill.

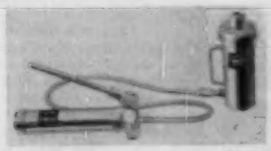
MANY USES

Electronic parts
Screws, bolts, nuts
Rivets, grommets
Drills, taps
Reamers
Auto parts
Name plates
Washers
Small gaskets
Dental tools
Labels, tags
Knobs, handles
Small gears
Vials
Instrument parts
Fishing tackle

▼ BREVITY—Identify by IEN - 12436 if you write the maker ▲▼

JACK . . Hand hydraulic design includes hand pump, hose and power ram

Source: TEMPLETON KENLY & CO.
1012 S. Central Ave., Chicago 44, Ill.



Re-Ma-Trol trade names new line of seven sizes of power ram, connecting hose and hand-operate hydraulic pump in a load range from 10 to 100 ton. Maximum line pressure is 10,000 pounds. There are two ram assemblies measuring 4½ and 12 in. in lowered height with 10 ton rating and plunger travel of 2 and 5½ inches. One 20-ton unit measures 10¾ in. lowered and has a lift of 12½ inches. Two 30-ton assemblies measure 5 and 9½ in. in lowered height with lift at 2 and 6 inches. One 60-ton ram is 9¼ in. lowered, has 3-in. of lift and a 100-ton assembly measures 10¼ in. with a 3-in. lift. All but the two smallest have center holes for application in pushing and pulling.

Two pumps are included in the line, one measuring 16 by 5½ in. with a 20-in. handle, the other measuring 19¾ by 6 in. with a 19-in. handle. Oil capacity is 54 and 126 cubic inches. Weights for these two pumps are 16 and 28 pounds.

▼ BREVITY—Identify by IEN - 12437 if you write the maker ▲▼

BUILDINGS . . Fenestra steel windows, hot galvanized sizes to 12 by 10 ft.

Source: DETROIT STEEL PRODUCTS CO.
2248-52 E. Grand Blvd., Detroit 11, Mich.

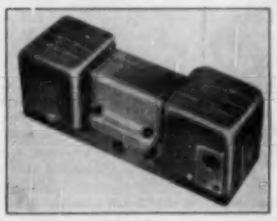
New plant is in Detroit

The company announces installation of hot-dip galvanizing equipment in which it will galvanize its lines of steel windows so the metal will require no finishing to prevent corrosion in service. The galvanizing will follow fabrication so all parts of the metal will be protected. Bonderizing follows the galvanizing to form a base for optional decorative painting.

▼ BREVITY—Identify by IEN - 12438 if you write the maker ▲▼

VALVE . . Four way pneumatic, solenoid operation, pressure to 150 lb.

Source: MECHANICAL AIR CONTROLS INC.
5425-29 Hecla Ave., Detroit 8, Mich.



Double-end assembly of two solenoids and a four-way valve is a recent addition to the company's line of single-solenoid units previously described IEN-8519-48. The second solenoid replaces the spring used for valve return in the original design, permits momentary contact in the solenoid circuit to move the valve spool to one end or the other. Two sizes are fitted with ⅜ and ¾-in. ports. O-rings seal the aluminum valve spool.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 12439 if you write the maker ▲▼

for GREATEST DEPENDABILITY and EFFICIENCY in metered pressure pumping of

SULPHURIC ACID

. . . at all concentrations

Pumps against line pressure . . . meters accurately . . . has no stuffing box, so eliminates leakage, prevents corrosion of pump or contamination of product, avoids loss of prime . . . lowest maintenance . . . Hundreds of satisfactory installations.

• NO STUFFING BOX OR RUNNING SEAL
• POSITIVE DISPLACEMENT PISTON MEASUREMENT
• FLOW RATE ADJUSTABLE WHILE IN OPERATION
• MANUAL OR AUTOMATIC CONTROL

Lapp PULSAFEEDER

PISTON DIAPHRAGM CHEMICAL PROPORTIONING PUMP

WRITE for Bulletin 262 with complete description and specifications.
LAPP INSULATOR CO., INC., PROCESS EQUIPMENT DIVISION, 124 MAPLE STREET, LE ROY, N.Y.

▼ BREVITY—Identify by IEN - 12440 if you write the maker ▲▼

Users Tell Our Story Best!

163 ORDERS FROM 3 CUSTOMERS ALONE...TOTALED 1,421,402 LBS.

SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

TAKES ONLY ONE MINUTE PER SQUARE FOOT!

Think of it . . . just 3 customers purchased almost 1½ million lbs. of Speed Patch. And more orders are coming from them regularly. They have ordered loads of other Rock-Tred products as well. Must be good. Let their experience be your guide. Find out how Speed Patch can make your floors pay off in cash. Write today!

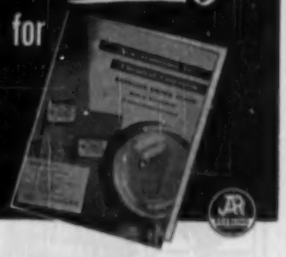
ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7830 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 8

▼ BREVITY—Identify by IEN - 12441 if you write the maker ▲▼

TO STOP CORROSION LOSSES

Today it's Roebling!

Send now for this free bulletin



HERE'S A BULLETIN that may show you how to stop or effectively reduce corrosion losses in screening and filtering operations. It describes Roebling's new wire filter cloth made of Hastelloy . . . cloth with an entirely new resistance to many acids, despite high temperatures and a wide range of concentrations. It also lists a wide range of corrosive media and indicates where Hastelloy alloys may be adopted for genuinely superior service. Write today.

WOVEN WIRE FABRICS DIVISION
JOHN A. ROEBLING'S SONS COMPANY
ROEBLING, NEW JERSEY
A CENTURY OF CONFIDENCE

▼ BREVITY—Identify by IEN - 12442 if you write the maker ▲▼

ARISTOCRAT of WORK BENCHES

. . . built for men accustomed to the finest tools and equipment

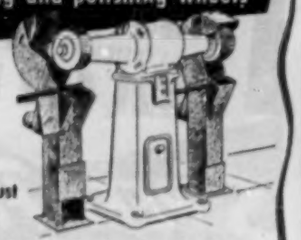
We "pulled out all the stops" when we designed the HALLOWELL Cabinet Bench, giving it more "custom" features than any other stock bench we know of. All-steel construction, choice of top materials, ample storage space, standardized units, interchangeable accessories, and trim good looks are just a few of its advantages.

Bulletin 702 tells the story. Write for your copy today!

HALLOWELL
SHOP EQUIPMENT OF STEEL
SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 74, PENNSYLVANIA

BREVITY—Identify by IEN - 12443 if you write the maker

KIRK-BLUM ECONOMY ADJUSTABLE HOODS for buffing and polishing wheels



Reduce power needs

Provide more effective operation of dust control system

Power consumption is reduced and suction is more effectively utilized with Kirk & Blum Economy Adjustable Hoods. Scientific design guides wheel-propelled dust particles directly into suction pipe. The Economy Hood is easily adjusted, permitting use on wheels of various diameters and work of any size. Hollow base acts as trap to catch small pieces of work. Quantity production of this hood results in low cost to you.

42 years of experience assure efficient dust control with Kirk & Blum installations. Write for Bulletin #949.

The Kirk & Blum Manufacturing Co. 2286 Spring Grove Ave. Cincinnati 25, Ohio

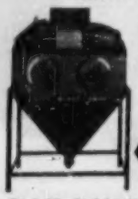
FOR CLEAN AIR . . . THE INVISIBLE TOOL

KIRK-BLUM DUST CONTROL

BREVITY—Identify by IEN - 12444 if you write the maker

CUT PRODUCTION and MAINTENANCE COSTS

with these inexpensive, ready-to-use Pangborn Blast Cleaning and Dust Collecting units you earn extra profits where custom-built equipment is not practical.



BLAST CLEANING CABINET

cleans metal parts, removes rust, scale, grime, dirt, paint, etc., in a few seconds. Ideal unit for producing clean, smooth surface on pieces up to 60" x 36".

BLAST CLEANING CABINETS $315. and UP

BLAST CLEANING MACHINE

for maintenance and many other uses including the removal of rust, dirt, scale, etc. Economically cleans large objects such as tanks, bridges, structural work preparatory to painting. 6 sizes, stationary or portable.

BLAST CLEANING MACHINES $170. and UP

UNIT DUST COLLECTOR

traps dust at its source, minimizes machine breakdowns, reduces your maintenance costs. Solves many grinding and polishing nuisances and material losses.

UNIT DUST COLLECTORS $286. and UP

HYDRO-FINISH CABINET

uses liquid blast, eliminating dust, and reduces costly hand polishing, cleaning and finishing of molds, dies, tools, etc. Removes scale, discoloration and directional grinding lines, prepares surfaces for finishing. Holds tolerances to .0001".

HYDRO-FINISH CABINETS $1295. and UP

Look to Pangborn for the Latest Developments in Dust Control and Blast Cleaning Equipment

MAIL COUPON TODAY!

PANGBORN CORP., 3300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me further information on—
☐ BLAST CLEANING CABINETS ☐ UNIT DUST COLLECTORS
☐ BLAST CLEANING MACHINES ☐ HYDRO-FINISH CABINETS
I am interested in the possibility of using one of these machines for
.....
NAME.....
COMPANY.....
ADDRESS.....
CITY.....STATE.....

Pangborn

BREVITY—Identify by IEN - 12446 if you write the maker

BUILDINGS . . Plastic dome skylight, rectangular copper frame, ten sizes

Source: WASCO FLASHING CO.
85-89 Fawcett St., Cambridge, Mass.

The plastic dome on this new Wascolite skylight is secured to a copper frame with a downward-extending skirt that fits over a curb provided in a roof by the user. The dome rides a gasket on the frame and is secured with gasketed screws. Around the edge between an inner vertical flange and the plastic is a condensation gutter draining through weep holes around the sides.

Six square units in the line range from 20 to 100 in. overall and from 14¼ to 94¼ in. inside the inner flange. Four rectangular units measure 20 by 28 in. to 36 by 100 in. overall with inner flange dimensions at 14½ by 22¼ in. to 30¼ by 94¼ inches. The plastic is $\frac{1}{16}$ to $\frac{1}{8}$ in. in thickness. It can be specified clear, ultra-violet or translucent. Details are contained in 4 page bulletin, "Wascolite Plexiglas Dome Skylight".

BREVITY—Identify by IEN - 12447 if you write the maker

LIGHTING . . Fluorescent lamp, single pin base, instant start design

Source: SOLAR ELECTRIC CORPORATION
47 Central Ave., Warren, Pa.

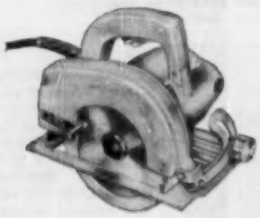
No starter is required

New units in the company's Slimline T12 fluorescent lamps includes 48, 72 and 96-in. lengths in 40, 65 and 75-watt ratings. Each is available in four colors to include standard and deluxe cool and warm white.

BREVITY—Identify by IEN - 12448 if you write the maker

WOOD WORKING . . Portable saw drives 6 in. circular blade, 5,600 rpm.

Source: STANLEY ELECTRIC TOOLS DIVISION
478 Myrtle St., New Britain, Conn.



Universal motor for operation on 110 or 220-volt ac. or dc. as specified for the voltage mounts a 6-in. circular blade on a ⅝-in. arbor in this new saw. A momentary contact switch in the handle provides control. Assembly is in a die-cast aluminum housing with a steel base. Rotating shafts are mounted in ball or roller bearings. The transmission employs helical gears.

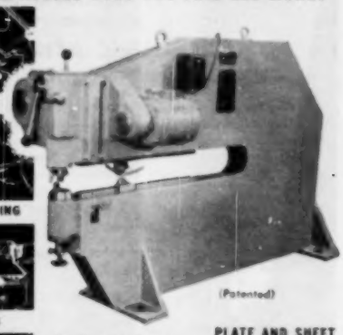
Capacity is to 2 in. at 90 deg. to 1½ in. at 45 degrees. Weight is 10 pounds. Abrasive blades or discs can be employed in place of the saw to cut steel, marble.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 12449 if you write the maker

SAVE TIME • LABOR • MATERIAL

PULLMAX DOES ALL THIS and MORE!



(Patented)

PULLMAX PLATE AND SHEET CUTTING MACHINES

With Pullmax you can work mild and stainless steels, as well as non-ferrous metals. Cuts circles, straight edges, inside designs, slots—does beading, folding and nibbling from shim steel up to 11/32" in mild steel.

Write for Illustrated Catalog

AMERICAN PULLMAX COMPANY, INC.
2631 N. WESTERN AVENUE • CHICAGO 47, ILLINOIS

BREVITY—Identify by IEN - 12450 if you write the maker

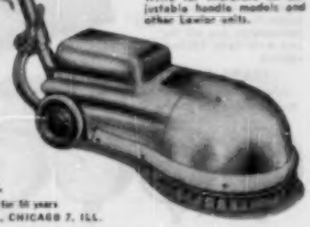
As a Man Bends, So Bends the LAWLOR

The adjustable handle makes it possible to scrub and wax polish in congested places where hand cleaning was necessary before — around and under machines, counters, desks, lockers, etc.

Operator can raise or lower handle to any angle within an 80 degree arc and shove the Lawlor under anything where there is at least a 9½" opening and as far back as 4½ feet.

Three models — a size to suit every need.

Write for literature on adjustable handle models and other Lawlor units.



There's a complete line of Lawlor Floor Maintenance Equipment — scrubbers, wax polishers, mopping tanks, mop wringers.

S. C. LAWLOR CO.
Quality Floor Equipment for 50 years
120 N. ABERDEEN ST., CHICAGO 7, ILL.

BREVITY—Identify by IEN - 12451 if you write the maker

FLOORS

for all industries and traffics. Materials only or completely laid.

INSTALLED

quickly, with a minimum dislocation of production.

TO MEET EVERY DEMAND

EMERY FLOORS
COMPOSITION FLOORS
MASTIC FLOORS

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Budd Co • Crown Cork & Seal Co.
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Pittsburgh Plate Glass Co • U. S. Steel • Weirton Steel Co.
Westinghouse Electric Corporation.
and a host of other manufacturers demanding specialized floors!

Write for free information to DEPT. E

FLASH-STONE COMPANY, INC.
ERIE AND PULASKI AVES., PHILA. 40, PA.

BREVITY—Identify by IEN - 12452 if you write the maker

FOTO-FLO* MODEL C PHOTO-COPYING MACHINE

New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 69 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY
ROCHESTER 3, NEW YORK
Branch Offices in Principal Cities
Photocopy Papers • Photo Copying Machines • Photographic Papers

BREVITY—Identify by IEN - 12453 if you write the maker

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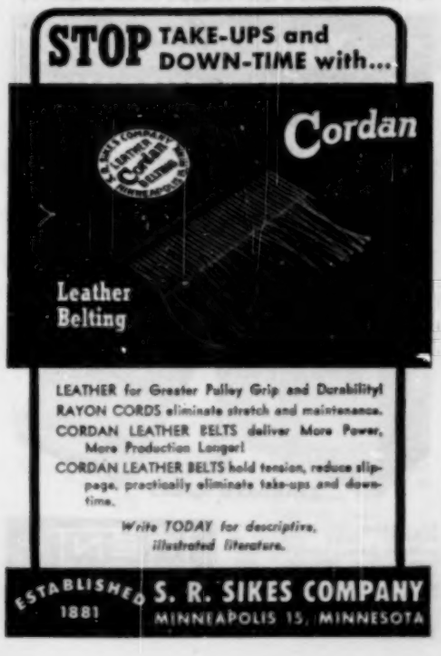
BREVITY—Identify by IEN - 12455 if you write the maker



BREVITY—Identify by IEN - 12456 if you write the maker

CLEANING . . Portable machine to wash building walls and ceilings

Source: ROSS & STORY PRODUCTS CORP.
522-26 Lincoln Bank Bldg., Syracuse 2, N. Y.

Painted walls and ceilings are cleaned by application of a special washing solution and clear water rinse with this recently improved machine. It applies first one and then the other through 16-ft. hose lines from twin tanks mounted on a base in portable assembly. Delivery is by air pressure which the operator develops with a built-in hand pump. One charge will serve for about six hours.

Flow control is at button valves in the heads or trowels on the removable applicator pads. About 5,000 sq. ft. of wall or ceiling surface can be cleaned in an 8-hour day. New design is in the tanks, base and heads which are now made of aluminum, a new hand pump, corrosion proofed parts, and 16 ft. in place of the original 12-ft. hose lines.

BREVITY—Identify by IEN - 12457 if you write the maker

CLEANING . . Dip or wash liquid removes masking tape, dirt from plastic

Source: SCHWARTZ CHEMICAL CO.
324-28 W. 70th St., New York 23, N. Y.

List price is $1.65 per gallon

Rez-N-Kleen is a new liquid for use on transparent acrylic plastics such as Lucite, Plexiglas to remove masking tape and to clean the surfaces. It is packaged in 1, 5 and 55-gal. containers and is applied by dipping sheet plastics or by wiping the plastic objects with a saturated cloth. The liquid can be applied also on ordinary glass. It does not deteriorate in storage over extended periods.

BREVITY—Identify by IEN - 12458 if you write the maker

CUTTING . . Abrasive disc machine for concrete and composition materials

Source: CLIPPER MFG. CO.
2802 Warwick, Kansas City 8, Mo.

Cutting speed is 12 fpm. in asphalt and 5 fpm. in concrete to a depth of 1 in. for three new machines that have been added to the Clipper Saw line. Maximum cutting depth is to 6½ inches. The machines are available with electric motors or with 7½ or 13-hp. gasoline engines. Each is adjustable for cut depth. The front wheels on the supporting truck are swiveled at the center so the machine will ride over a rough surface without binding. The abrasive disc is a metal-bonded diamond unit intended for cutting masonry.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 12459 if you write the maker

If the Buckets in Your Steam Traps Act Like This... Switch to Super-Silvertops with Guided Buckets

If the buckets in your steam traps wobble like an old car, switch to Super-Silvertops. Only Super-Silvertops have guided buckets which prevent sloppy bucket action. A guided tube controls the bucket, eliminating bucket swing which causes bucket damage and high replacement costs. In addition the exclusive Super-Silvertop bucket lever assures positive seating . . . preventing costly leakage of live steam. Only Super-Silvertops give you these cost-cutting advantages. These features, plus information on the sizing of steam traps for installations, are discussed in Anderson's book "Solving Steam Trap Problems." Write for your copy today.

SUPER-SILVERTOPS SAVE MONEY • STRAIGHT IN LINE • OR AS AN ELBOW

THE V. D. ANDERSON COMPANY
1931 West 96th Street • Cleveland 2, Ohio
Gentlemen: Please send without obligation "Solving Steam Trap Problems."
Name .....
Address .....
City ..... State .....
In Canada: Sowden Machine Co., Toronto
SUPER-SILVERTOP STEAM TRAPS

BREVITY—Identify by IEN - 12460 if you write the maker

BREVITY—Identify by IEN - 12461 if you write the maker

ALUNDUM ABRASIVE

For Polishing—ALUNDUM Abrasive speeds-up polishing jobs and produces the finish you're after because it's extremely hard, sharp and tough—uniform in chemical composition; in crystal structure and in grain size and shape.

For Barrel Finishing—ALUNDUM Tumbling Abrasive is an ideal barrel finishing medium because it's **all abrasive** for a continuous cutting action—**heavy** for a fast, positive cut—**hard and tough** for a long, productive life.

NORTON COMPANY • WORCESTER 6, MASS.

NORTON ABRASIVES

G-223

BREVITY—Identify by IEN - 12462 if you write the maker

Now—
play a jet of Metso Cleaner solution on the most stubborn dirt job in your plant.
See the difference! Metso leaves a dirt-free surface without film.

Metso's properly balanced alkali and silica components penetrate grease and dirt deposits in less time. Ask for a sample of the proper Metso Cleaner for your operations.

METSO *detergents*

Metso Granular, Sodium Metasilicate
Metso 99, Sodium Sesquisilicate
Philadelphia Quartz Company
1131 Public Ledger Bldg., Phila. 6, Pa.

▼ BREVITY—Identify by IEN - 12463 if you write the maker ▲▼

For Dependable Flow Control!

THE DAVIS NO. 60 FLOAT VALVE

. . . use DAVIS FLOAT VALVES

ENGINEERS interested in working out efficient, trouble-free fluid level and flow control backups will find a wide choice of units offered in the Davis line of float valves, float boxes, and fluid control valves.

For Float Valve dependability the Davis No. 60 is unexcelled. Here are a few of its outstanding features:

1. The Famous Davis Single-Seat Pilot Stem Valve! Tight-closing and non-sticking. Standard sizes will open against any pressure up to 125 lbs.
2. No internal packing! Disc renewable easily and economically. Hot or cold liquid at high or low pressure handled without heating or water hammer.
3. Sizes 3" and smaller are all-brass valves. Larger sizes have semi-steel body, bronze bonnet, piston and trim. Globe or angle body patterns. Send for new Catalog A-59.

DAVIS REGULATOR CO., 2529 S. Washtenaw Avenue, Chicago, Ill.

DAVIS REGULATOR COMPANY

▼ BREVITY—Identify by IEN - 12464 if you write the maker ▲▼

Series 610 A.C.—615 D.C.

One of a line

Relays BY GUARDIAN

CHRISTMAS OR CONVOYS . . . For peace-time products or national defense—let Guardian be your first line supplier.

The Guardian 610 A.C. and 615 D.C. Relay shown above is small and low priced, yet packed with power. Furnished hermetically sealed with the Screw Terminal housing shown. Octal Plug, or A.N. Connector housing.

Screw Terminal Hermetic Housing

GUARDIAN ELECTRIC
1620-P W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

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SURE CURE FOR PUMP HEADACHES

TUTHILL PUMPS

Forget pump worries. Tuthill small pumps are recognized the world over for their dependability in lubrication, coolant, hydraulic and liquid transfer service. These internal-gear type rotary pumps are available in capacities up to 200 g.p.m. and pressures up to 400 p.s.i. Wide choice of porting and mounting arrangements in both packed and mechanically sealed pumps. Write for General Catalog.

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

DECEMBER 1950 INDEX TO ALL PRODUCTS

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our sixteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

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The ANSWER to controlling air electrically!

MODEL NE *Electric* VALVE

10 WATT SOLENOIDS—Low power requirements. No relays, no transformers required. Operates directly off regular 110 or 220 v. circuits. Solenoids continuously rated.

FAST, EFFORTLESS CONTROL—Works by push button, limit switch, or any light contact. Only momentary contact needed. Ideal for remote control . . . interlock or sequence operation . . . building into equipment.

DISC TYPE—Pilot controlled; piston operated. Metal-to-metal seat; positively air-tight. Quiet, self-lapping, long lasting. No packing or seals to maintain.

HANNIFIN ENGINEERED—Small, rugged, self-contained. Type 1 for control of advance and return cylinder strokes through separate push buttons. Type 2 for single push button control—equivalent to spring return valve action. Sizes ⅛", ½", and ¾". 25 to 150 p.s.i.

Ask for Bulletin 230

HANNIFIN *Corporation*
1107 So. Kilbourn Avenue • Chicago 24, Illinois
Nationwide Sales and Service

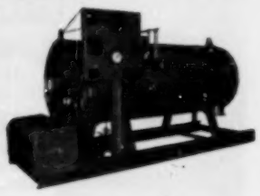
▼ BREVITY—Identify by IEN - 12467 if you write the maker ▲▼

HOW MUCH can you SAVE

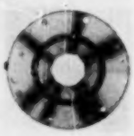
By Installing a STEAM-PAK Generator

$20,000.00 SAVED ANNUALLY

New England Textile Manufacturer formerly used 60 tons of coal at $13.30 per ton; now uses 5,000 gal. of oil at 8c per gal.—saving $570.00 per week on fuel cost plus salaries of three men, brought savings to approximately $20,000.00 per year.



THE ONLY STEAM GENERATOR WITH *Iris Shutter*



Watch Dog of your Boiler Efficiency. Whether you use gas or oil, the Iris Shutter gives you absolute control of the air injected into your burner to provide proper flame control, from partial load to full load.

Steam-Pak Generators are built in capacities from 15 H.P. up, for low or high pressure steam or hot water, for light or heavy oil, combination gas and oil, or straight gas.

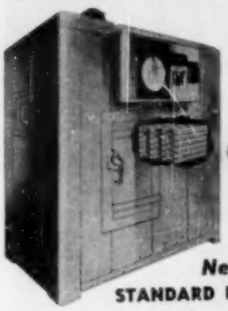
Can you save money with a Steam-Pak? See your nearest York-Shipley Distributor or write, wire or 'phone.

YORK-SHIPLEY
INDUSTRIAL DIVISION
1218 Jessup Place, York, Pa. 'Phone 7861

▼ BREVITY—Identify by IEN - 12468 if you write the maker ▲▼

***Tag* YOUR *Product With This* 5-YEAR GUARANTEE**

Whether you make hamburger grills or drying machinery—glass annealers or resin kettles—space heaters or melting pots—you can now back them up with a Five-Year Guarantee if you use TRENT "FOLDED-and-FORMED" Heating Elements.



Here's the way to make your product fulfill its promise of faithful performance, by guaranteeing 5 years of sustained, failure-proof heating efficiency. Guarantee covers temperatures to 750° or 1350°F.

New STANDARD RACKS

Standard "FOLDED-and-FORMED" racks, 12" x 12" or multiples thereof, easily installed, horizontally or vertically, to give 1.5 KW to 300 KW. Drilled for mounting. Write for complete information.

TRENT INC
Electrically Heated Industrial Equipment
747 LEVERINGTON AVE. PHILA 27, PA.

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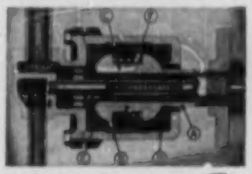

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